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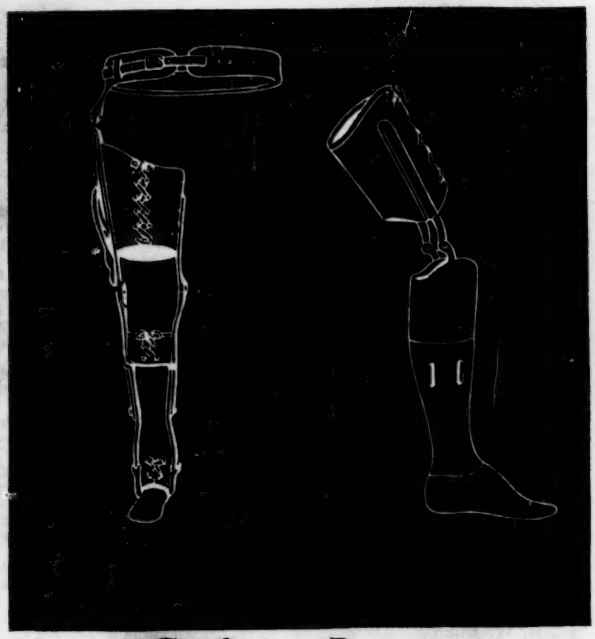

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NEW ENGLAND SURGICAL SOCIETY

A FORM OF SCLEROSING OSTEOMYELITIS FOLLOWING FRACTURES OF THE LONG BONES*

BY PAUL P. SWETT, M.D.†

BY a singular coincidence it was my lot to see three peculiar and previously unheard of cases of pain and disability following fractures of the long bones at about the same time. All of them presented certain similarities which seemed to link them into a single group. In two of these the fractures occurred in the shaft of the tibia and in the third the shaft of the second metatarsal bone. Symptomatically these patients complained of disabling pain long after the fractures had united. Physical examination showed local edema of the soft tissue surrounding the sites of the fractures, and local tenderness, and the x-ray showed an obliteration of the medullary portion of the bone for a considerable distance at the fracture site. These three patients shared the accusation of malingering. Both men had been denied further compensation insurance benefits on the basis that they were able to work, and the woman was thought to be brazenly malingering. A search of the literature has not brought to light a single reference to the condition from the clinical side though there are a few obscure pathological references. Hence it seems appropriate to report these cases in some detail, and to follow this with a discussion of the pathology.

CASE 1. H. R. A young man aged twenty-seven years, married, in good health, formerly employed as a lineman by the Western Union Telegraph Company, was referred to me January 24, 1933 by Compensation Commissioner Donohue because of pain and disability involving the right leg following a fracture sustained while at work on October 7, 1927 when a pole fell on his leg. Following this injury he was treated in a hospital for ten weeks, during which time the leg was immobilized in a circular plaster case. At the end of twenty-one weeks he resumed his former work but he could not long continue it because of constant pain near the fracture site. He noticed that his leg was bowed when he resumed his work, and he felt that the bowing increased as time went on.

The examination showed him to be well developed and nourished, and healthy appearing; mouth and throat were negative; heart sounds normal; blood-pressure 122/86; abdomen negative; reflexes normal. The right leg showed an old healed fracture of the tibia and fibula in the mid-portion which had united with considerable external bowing and an inch and one-eighth of shortening. He had good motion in the knee, hip and ankle. He had no limitation in straight leg raising of either thigh; normal range of motion in both hips, knees and ankles. He referred the origin of his discomfort to the fracture site in the mid-portion of the tibia; both legs were moderately bowed but the right leg was unquestionably more bowed than the left.

X-rays at that time were reported by Drs. Roberts and Ogden as follows:

> "The x-ray examination of the right leg shows evidence of old fractures of the tibia and fibula in their middle thirds. The fragments of each bone appear firmly united at this time with abundant callus formation. The lower tibial fragment is displaced to antero-external aspect fully one-half the width of the shaft and the fragments show a slight degree of postero-external angulation. The lower fibular fragment is displaced completely to antero-external aspect with slight overriding."

Although this patient was a compensation case he was not interested at the time I saw him in securing a permanent partial disability settlement, but he was anxious to have some type of treatment to relieve the pain in his leg. I came to the conclusion that the pain resulted from the strain secondary to the bowing and the shortening, and that the only effective plan that we might pursue to relieve this pain would be to do a corrective osteotomy above the fracture site. I suggested that if the patient objected to so radical a procedure, it would not be unreasonable to let him try the effect of balancing his shoe in such a manner as to relieve some of the strain.

We tried this for approximately six weeks, but on March 14, 1933 the patient said that he could not see that there was any improvement and that the leg troubled him so much that he was not able to work continuously, and I, therefore, arranged for the corrective osteotomy.

This procedure was carried out on March 20, and the following operative note was made at that time.

> "The purpose of the operation was to correct a bow-leg deformity resulting from an old fracture at about the mid-portion of the right tibia and fibula. The fracture had been of the oblique type and while it was solidly united there remained a considerable degree of external bowing, a slight degree of posterior bowing, and some degree of internal rotation of the distal fragment. Through a three inch longitudinal anterior incision we did an oblique osteotomy of the tibia slightly above the fracture site and through an external longitudinal incision we did a transverse osteotomy of the fibula at the same level. The wounds were closed in layers without drainage, the leg was manipulated into as nearly

*Read at the Annual Meeting of the New England Surgical Society at Manchester, N. H., September 28, 1935.

†Swett, Paul P. — Attending Orthopedic Surgeon, Charlotte Hungerford Memorial Hospital, Torrington. For record and address of author see "This Week's Issue," page 32.

correct alignment as possible and immobilized in this corrected position in a circular plaster case extending from the toes to the mid-thigh."

By July 20 the following note was made:

"The alignment of his leg is perfect. He appears to have solid union at the osteotomy site. New x-rays made today confirm this clinical observation. I have, therefore, advised him that he may discontinue his crutches."

On September 14 our note is as follows:

"The alignment of his leg is very satisfactory. There are no signs of inflammatory reaction and while it seems to me entirely reasonable that he may continue to have some pain at the old fracture site, for some little time in the future, I do not think that the extent of his pain now should be of sufficient degree to totally disable him, and I believe his leg is now strong enough to permit his resuming his work."

On October 13, although the patient continued to complain of pain, saying that his leg bothered him just the same as it did before the corrective osteotomy, I made the following note:

"My examination of his leg today shows that the general alignment is satisfactory, that there is only a slight increase in the degree of varus of the right leg, as compared with the left, there is no swelling, there is no local disturbance in the circulation. He has a full range of motion in his knee and in his ankle, and there is no reason at the present time that I can see why he should not do his former work."

On November 13 I made the following note:

"He has been doing some odd jobs around the past month and he says that the more he does with his leg the more pain he has; that the pain is just the same as it was before I operated upon him and that the pain extends downward from just below the site of the old original fracture in his tibia and he says that at times also, the leg swells and he has tenderness to local pressure and some edema throughout the region of the fracture site. Because of his continued symptoms and because of the edema, I do not see how we can avoid the conclusion that there must be something in connection with the original fracture site which leads to these symptoms and while his leg now looks quite straight, lining up perfectly in comparison with the other leg, I believe we should have new x-rays of the entire right leg to see what explanation we can find for these continued symptoms."

On November 23, the x-rays were reported as follows:

"The x-ray reëxamination of the right leg now shows firm appearing and rather dense union throughout tibial and fibular fracture sites. The position of the fragments remain approximately the same as last noted."

And I found that the patient still had a distinct area of local edema at the original fracture site in his tibia.

"On reviewing his last x-rays I was impressed by the fact that he has an unusually extensive degree of sclerosis of the medulla at each side of the fracture site. Basing my decision, therefore, on this x-ray observation, the patient's apparently sincere complaint of continued pain, the presence of the local tenderness and the undoubted local edema, I have concluded that we are dealing with a painful condition which either is similar or at least is analogous to, a sclerosing type of osteomyelitis. I believe that we should operate at the original fracture site for the purpose of opening the medullary area on both sides of the old fracture site in an effort to overcome the sclerosis and reopen the medullary channel to relieve the tension and consequent pain."

This operation was carried out at the Hartford Hospital on December 4, and the following operative note was made:

"Operation was for the purpose of doing a decompression of the medullary portion of the tibia at the site of a fracture at about the junction of the lower and middle thirds of the tibial shaft. The original fracture fragments were oblique and had united in position of considerable external bowing. The patient had persistent pain at the fracture site accompanied by local edema of the soft tissues and this pain had not been relieved by an osteotomy done several months ago above the fracture site for the purpose of correcting the alignment of the leg. On this occasion we exposed the original fracture site through a four inch anterior longitudinal incision. We took out a slot of bone approximately one inch in length on each side of the original fracture site and we found that for a distance of more than an inch on each side of the fracture line the medulla had been replaced by cortical bone. After we had removed about two inches of the anterior surface of the tibia approximately one-half inch in width we were able to break through into the medullary cavity at each end and thus to establish a communication again. Wound was closed in layers without drainage and the leg was immobilized in a circular plaster case extending from the toes to the knee."

The pathological report follows:

"R——. Diagnosis: Focal necrosis of bone.
Macroscopic: Specimen consists of many fragments of bone tissue in part dense cortical type, with some areas of cancellous bone.
Microscopic: The decalcified sections show in part dense cortical bones of essentially normal structure. The marrow spaces are largely filled with fat. There is no obvious proliferation of bone tissue. There are, however, several areas of necrosis with an amorphous blue staining granular débris not associated with inflammatory reaction. There is no evidence of neoplasm."

Following this procedure the patient appeared to to make an uninterrupted recovery and the following note was made:

"His leg pains are less but he notices that, since he discontinued the crutches, he has had a little buckling sensation in his knee when it is hyperextended.
"Examination of his knee suggests the possibility of a slight amount of thickening of the infrapatellar pad. The alignment of his leg is normal; the wound is beautifully healed; there is no local edema or hypersensitiveness and a normal range of motion in his ankle joint. He has full flexion and full extension in his knee joint.
"It seems to me that except for some degree of weakness in his leg resulting from disuse, he has made an excellent recovery. I think he has convalesced now to a point where he is able to resume his work and I do not believe it will be necessary for me to examine him

again, and I anticipate he will have a very satisfactory result."

The last time I heard from him in July, 1935, he said his leg was entirely well and he was applying for a job as a state policeman.

CASE 2. A. S., a man of forty-eight, married, in good health, formerly employed by the Connecticut Quarry Company, was referred to me on December 1, 1933 by Attorney Richard Deming because of pain and swelling in the left leg following a fractured tibia and fibula sustained while at work on August 10, 1932 when a stone fell and struck his left leg above the ankle, causing the fractures. Following this injury he was treated in a hospital, first by skeletal traction with a pin in the heel, and then a cast was applied. On May 22, 1933 he resumed work but was unable to continue after the second week on account of pain and swelling in his leg. If he made a misstep his leg bothered him.

Examination showed him to be well-developed and well-nourished and healthy appearing. He had two upper crowned teeth and one retained lower root; throat was negative. Heart sounds were normal; blood-pressure 136/100; abdomen negative. His patellar reflexes were normal. There was a fracture of the left tibia at the junction of the lower and mid thirds which had united with some inward displacement of the distal fragment; the alignment was good. There were edema and tenderness present at the fracture site. There was no false point of motion and no heat; some limitation in ankle joint motion. The patient had bilateral bowleg but it was less marked on the fracture side than on the sound side.

X-rays made at that time by Doctors Roberts and Ogden were reported as follows:

> "The x-ray examination of the lower two-thirds of the left leg, including the ankle, shows an oblique fracture through the tibia 9 cm. above the distal end. Firm bony union has taken place with the lower fragment displaced to the inner side approximately one-third its width. There is an oblique fracture through the fibula at the same level. Firm bony union likewise has taken place here with the lower fragment displaced to the inner side over one-half its width.
> "The arteries throughout the region examined are moderately calcified."

I reviewed these films and while I was in agreement with the above findings, it seemed to me that there also was an additional factor in connection with the unusually extensive degree of sclerosis for a considerable distance at each side of the old fracture site involving the whole medulla in this area and preventing the normal communication within the medullary cavity between the distal and proximal fragments. This fact taken in conjunction with the patient's complaint of continued pain and the presence of local edema in the neighborhood of the fracture site led me to the conclusion that he had a considerable degree of disability and continued pain, and while the patient unquestionably exaggerated the extent of his disability somewhat, I was inclined to think he should be given the benefit of the doubt, and that his tibia should be operated upon for the purpose of reëstablishing the communication between the medullary cavity of the upper fragment and the lower fragment.

The patient was operated upon on April 23, and the following operative note was made:

> "The operation was for the purpose of reëstablishing the medullary canal where it had become blocked off at the site of a fracture at about the junction of the middle and lower thirds of the left tibia, because the patient had local edema and tenderness, constant pain and occupational disability. We exposed the area through a four inch anterior longitudinal incision. We found the periosteum very thick and dense and perhaps four times as dense as normal. We removed a slot from the anterior cortical surface, approximately three inches in length and we found that for a distance of approximately three-fourths of an inch in the midportion of this slot the medullary canal was completely blocked by dense eburnated bone. The removal of the slot restored medullary communication. The periosteum was carefully closed over. The skin was closed with silk and the leg was immobilized in a circular plaster case extending from the toes to the knee."

Following this procedure the patient appeared to make an uninterrupted recovery until on June 7, 1934 the following x-ray report was made.

> "The x-ray reëxamination of the left leg shows evidence of surgical procedure along the inner aspect anteriorly of the tibial fracture site with an absence of a portion of cortical bone along this area and also an apparent absence of a portion of the medulla, with a cavitation now formed extending from the upper to the lower fragment, through the fracture site. All fragments remain firmly united as formerly noted. Throughout the medullary portion of the operative site, there are a few small fragments of bone. Otherwise, the findings are negative."

The pathological findings were as follows:

> "A. S.—— Diagnosis: Focal necrosis of bone.
> Macroscopic: Specimen consists of many fragments of bone chips together forming a mass about 3 cm. in diameter.
> Microscopic: Sections show largely a cancellous type of bone. The trabeculae appear somewhat thickened and rather irregular. There is no neoplastic proliferation. Marrow spaces are largely filled with fat, though in some places there appears to be increased vascularity. There are one or two small areas of degeneration with amorphous calcium deposit not associated with inflammatory reaction. No evidence of malignancy."

On July 6, I made the following note:
"He seems to have made a practically complete recovery. There still is a little tenderness and a little edema in the region of the scar. He is to discontinue the cane, discontinue the bandage and he may resume work."
On November 30, 1934, he wrote that he wanted me to know that the leg was "all right".

CASE 3. F. K., a young woman of twenty-three, in good health, employed at the Windham County Hospital, was admitted to the hospital on November 16, 1933 because of pain and swelling on the dorsum of the right foot which she began to notice about six days before her admission. Three or four weeks before her admission she had run the wheel of a hospital bed over the dorsum of her right foot but thought very little of the accident at the time although for two weeks afterward she had difficulty in walking, particularly upgrade. She had no symptoms indicative of arthritis; no history of chills and no swelling in the groin or leg.

Examination showed a well-nourished girl. Her pupils were equal. Tonsils had been removed; there was no general adenopathy. The heart was not enlarged and there were no murmurs. Abdomen was negative. Lungs were clear and resonant. Examina-

tion of the foot showed marked swelling and tenderness over the dorsum of the foot; there was a suggestion of an ecchymotic area in this region.

X-rays made on November 14 showed no evidence of fracture or dislocation. There were no localizing signs of tumor or disease, nor was there any evidence of foreign body.

On November 27, 1933 a reëxamination of the right foot is reported as follows:

> "Reëxamination of the right foot now shows some periosteal new bone along the margin of the distal third of the shaft of the second metatarsal. There is a very slight amount of bone destruction on the internal side of the shaft in this area and in the soft tissue there is a shadow approximately one-half cm. in thickness which is just surrounding the first mentioned portion of the shaft. There is also considerable soft tissue swelling over the dorsum of the foot. These findings are thought to be due, first, to an osteomyelitis, probably tuberculous in origin, secondly, to lues and third, to neoplasm. The first is thought much more probable."

On November 29, 1933 it was decided to explore the region and the following operative note was made:

> "Under gas-oxygen anesthesia a small incision was made over the distal end of the second metatarsal and after going through the skin a cavity was entered which was lined by necrotic and broken down tissues with some old blood clot. The appearance of the cavity suggested tuberculosis. No frank pus was encountered. The incision was carried down to the distal end of the shaft of the second metatarsal bone and here the periosteum was found to be stripped and the bone to be roughened. A specimen of the bone was removed for pathological diagnosis as well as the tissue lining the cavity. Boric ointment drain was placed to the center of the wound."

Following this procedure the patient had a fairly satisfactory convalescence with gradual improvement until she was discharged on January 12, 1934.

The pathological findings were as follows:

> "F. K.—— Diagnosis: Bony fragments; adipose tissue with organizing exudate and hemorrhage.
>
> "Gross: The specimen consists of several small pieces of tissue said to be curettings from the second metatarsal bone of the right foot. They are irregular, the largest being approximately .2 cm. in length. All the fragments are firm and pearly white. The entire specimen is preserved for microscopic study.
>
> "Microscopic: The preparation consists of several fragments of osseous tissue the marrow of which has been replaced by a thin network of connective tissue which contains a very slight sprinkling of small round cells of adipose tissue scattered throughout which are large areas of fresh extravasated blood and slight sprinklings of small round cell infiltration. Many of the areas of hemorrhage appear altered and extending into them are proliferations of fibroblasts and capillaries."

Postoperative x-rays are reported as follows:

> "December 20, 1933—Reëxamination of the right foot shows a marked increase in the amount of calcium laid down in the area previously described at the distal end of the shaft of the metatarsal to the second toe. This has the appearance more of a chronic granuloma rather than osteomyelitis of pyogenic origin.
>
> "January 3, 1934—Reëxamination of the right foot shows very little change since the previous examination except that more calcium has been laid down on the distal third of the shaft of the second metatarsal. There are still some areas of bone loss, some of which very closely simulate a fracture through this area."

The following is a copy of a letter from Dr. M. C. Sosman, to whom the x-rays were sent:

> "Your films show a very peculiar form of osteitis and periostitis of the distal end of the second metatarsal. It is hard to reconstruct the progress of events from these films but one can see that there was no evidence of fracture or osteomyelitis November 14, that there was a definite periostitis November 27 with healing December 20 and January 3. It is conceivable that this lesion began as an infected hematoma on or around the bone, later involving the bone. It does not look like tuberculosis and there is no evidence that it is Madura foot. I should expect the process to subside without further complications."

On February 20, 1934 this patient reëntered the hospital. She had gradually improved after leaving the hospital and had returned to work, but three days before readmission she began to have a return of pain and swelling on the dorsum of the foot.

X-ray reëxamination showed very little change in the size and shape of the calcareous deposit around the distal third of the shaft of the second metatarsal since the previous examination.

On April 11 I was called in consultation and made the following note:

> "I saw this patient in consultation with Dr. Ottenheimer. I was informed that after I saw her previously in January the wound healed and her febrile reaction ceased so that she returned to her home for a month and got along very well until the pain and swelling recurred and since then she has been in the hospital with pain, swelling and edema on the dorsum of her foot and the maximum local tenderness is over the second metatarsal. X-rays of her teeth and sinuses have been made and are negative; Wassermann is negative, and test for undulant fever is negative. New x-rays of her foot, made on the 26th of March, appear to show the process healing. In view of the absence of any other apparent cause for her fever and because of the persistent swelling and thickening and local tenderness, I advised another operation and this operation was carried out at the hospital on April 13. Assisted by Dr. Ottenheimer, I exposed the site of the lesion of the second metatarsal through the previous incision, somewhat enlarged. We removed from the dorsal surface of the metatarsal quite a thick plaque of very pale appearing dense fibrous tissue which seemed to be partially calcified. We also removed enough of the cortex of the bone directly underneath this mass of tissue, so we could establish normal communication on both sides of the medullary cavity. The wound was closed in layers without drainage and the removed tissue was sent to the laboratory for further examination. Judging from this experience and what I could see in the gross specimen, the condition would seem to have been one of mild chronic periostitis of the metatarsal bone."

The pathological findings are reported as follows:

> "Gross: The specimen consists of a number of small fragments of yellow-white tissue most of

which is adherent to bone. The bone is stripped from one of the fragments of tissue and the soft tissue sent through for immediate microscopic preparation. The remainder of the specimen is preserved for decalcification and later microscopic preparation.

"Microscopic: Preparation consists of fragments of osseous tissue. The bony lamellae are rather broad and show well formed haversian systems. The marrow spaces are filled with a rather loose fibrillar connective tissue with a considerable number of adipose tissue cells scattered throughout. No islets of blood-forming cells are seen The bone lamellae are thicker in some places than in others. In some areas the surface of the bony fragment is covered by periosteum. No evidence of atypical proliferation is noted. No cellular infiltration is noted anywhere in the preparation.

"Diagnosis: Fragments of osseous tissue."

Following an uneventful convalescence and recovery, the patient was discharged from the hospital on May 19, 1934 using crutches.

On December 28, 1934 Dr. Ottenheimer wrote:

"You might be interested to know as a follow-up note on Miss K. that she has made a perfect recovery. She is now working again in our hospital and has no limp or any pain or swelling in the foot and her general physical condition apparently is good."

While it is true that there is very little clinical record of such a condition as these three cases represent, fortunately there is some light thrown upon it by the pathologists and this serves to corroborate the authenticity of these clinical findings.

Adami and McCrae, Textbook of Pathology, Lea & Febiger, 1912, p. 682, classify chronic osteomyelitis as showing two forms: 1. Rarefaction or osteoporosis. 2. Condensation or sclerosis. Condensing ostitis occurs where the irritation is not so intense. One of two events may occur. Either there is evidence of increased osteoblastic activity so that the lamellae undergo progressive thickening and the marrow spaces reduce, or the marrow first becomes less cellular, shows an increased fibrosis, and the cells of this fibroid tissue undergo metaplasia becoming bone corpuscles. In this way the *whole* of the *marrow* may become *converted* into *dense bone.*

Kaufmann's Pathology; trans. by Reimann. Vol. 2. P. Blakiston's Son & Co., 1929, pp. 1106.
Ostitis (actually endostitis) Ossificans. Condensing Ostitis, Osteosclerosis.
Direct antithesis of osteoporosis.
Consists of formation of new, at first osteoid, then calcified true bone changes, coming from the marrow and vessel cavities and encroaching upon the old trabeculae. The spaces within the bone are filled with more and more bone tissue. This type of ostitis ossificans may lead to stony hard thickening, sclerosis and eburnation. Volkmann differentiates restitutive, reactive or indurative and idiopathic bone sclerosis. The restitutive sclerosis sometimes follows a rarefying ostitis. The *closure* of *marrow cavities after fractures,* in amputation stumps, in the space left by discharged sequestra is due to this osteomyelitis ossificans. It may follow chronic central osteomyelitis, with the formation of sequestra, it always occurs in the neighborhood of bone abscesses, or may follow a leg ulcer, or a chronic suppurative arthritis.

Geschickter and Copeland. Tumors of Bone, p. 662, 1931, refers to Garré's nonsuppurative ostitis.
The lesion is solitary and usually affects the tibia. Pain is not severe but may be aggravated by exertion and is often worse at night. It starts abruptly with fever and leukocytosis, subsides rapidly into a chronic course extending over a period of years. The medullary cavity is narrowed or obliterated and the cortex thickened and its density increased. It is the result of a low-grade infection in the lymphatics of the bone which brings about an increased fibrous and fibro-osseous proliferation.

These three cases form a group presenting common characteristics which seem to warrant their inclusion in a single clinical entity. These characteristics include a fracture, solid bone union, persistent pain, lameness, occupational disability, local tenderness, local edema, x-ray evidence of a sclerosis of the bone throughout the original fracture site and extending across the medulla; and recovery following the operative reëstablishment of the medullary canal between the upper and lower fragments. In addition the microscopic appearance was similar and apparently in the nature of a focal necrosis of bone.

The similarity between this condition and the sclerosing osteomyelitis of Garré led to the trial of the operation, and in every instance the effects were as striking as they are in the Garré cases. It is assumed that the condition is one of local sclerosis so extensive as to invade and block the medulla. In Garré's type the irritative process is held to be a sluggish localized osteomyelitis accompanied by a simultaneous process of repair and this combination results in a sclerosis extending across the medulla. The pain and local edema with tenderness indicate the tension within the bone because of the bridging of the medullary canal. The x-ray appearance, the signs and symptoms as well as the effects of operative treatment are so similar in Garré's type and in the cases here discussed that I am led to the hypothesis that certain fractures in the process of healing may respond to the irritating presence of minute areas of sterile necrosis resulting from the trauma that caused the fracture in the same manner as occurs in response to the irritating presence of a minute localized osteomyelitis in Garré's type of process. So far as the microscopic appearances go, there is considerable support for this theory, and nothing, so far as I can determine, to contradict it.

The practical importance of these observations cannot be overestimated since they make it obligatory for fracture surgeons to prove that a suspected malingerer is not suffering as he complains. This attitude may result in lowering the number of so-called compensation and litigation neuroses, conditions that do exist but whose existence we should not allege until we are sure of our ground.

DISCUSSION

DR. JAMES WARREN SEVER: I was very much interested in hearing Dr. Swett's paper.

This condition which he has described is apparently a rare one so far as his experience goes, and it is also a rare one in my experience.

From the point of view of the industrial surgeon, it seems as if the condition would be one of the greatest importance, and with the many fractures of both bones of the leg which exist in industry, and which come under the control and direction of the various compensation boards, it would seem as if this condition should have been recognized before, and should not by any means be a rare one. It is an interesting thing, that, in relation to fractures of the bones, particularly since the various compensation acts have come into effect, it is considered that the anatomical repair is but a prelude to functional restoration of the limb, and the ability of the man to return to work.

Judges and juries today rarely admit cure of a fractured limb, pending acquisition of its complete functional aptitudes. French experts draw definite distinction between "the consolidation surgical" and the "consolidation judicial", or functional restoration.

Interesting and humiliating as it may be, the jurists were the first to realize the true goal of therapy, that is, the restoration of functional capacity following an injury.

These cases of Dr. Swett's bring up again the difficult question of the difference between malingering and real functional disability in border-line cases. I can find nothing in the literature after a careful search, which gives one any lead in relation to the conditions which he has found. Faulty anatomical position, alignment and weight-bearing of the fragments, even when united, may well lead to pain and edema and even mild neurotrophic disturbances, which may continue for a long period of time. Faulty alignment and weight-bearing, even with normal union, may lead to persistent interference with the circulation and normal muscle pull, and so constitute disability.

Any fracture, of course, particularly one extensive enough to fracture both bones of the leg, may result in considerable injury to the vascular, nerve, and muscle apparatus, and it might well be that the conditions which Dr. Swett describes might be in part due to these associated injuries.

Pathologically, repair of fractures of the bones almost always sets up solitary noninfectious, nonsuppurative, low-grade inflammatory lesions. It is quite easy to understand that destruction of the trabeculae may have a pathological effect on the venous sinuses that are supported by them, causing thinning of the vessel walls, which possess no muscular fibers, and their dilatation and varicosity, transudation and possible rupture. The varicosed and dilated vessels are always a constantly active factor, with the aid of the forming granulating tissue in which they are enmeshed, in the further rarefaction, and progressive destruction of the bone from pressure necrosis. This constitutes a low-grade osteomyelitis, and in spite of the thickening of the cortical bone, and the apparent destruction of the medullary canal, may have been a factor in the causation of the pain and the localized edema.

Pathologically, Dr. Swett found dense cortical bone, however, of normal structure, with the marrow space filled with fat. There were several areas of necrosis found in these sections, which make one think that there is a possibility of a noninfectious, low-grade osteomyelitis. In some sections, there appeared to be increased vascularity, which might account for the pain and the edema. Granulation tissue, as you know, is always found as a result of regeneration and reconstruction. Any such a process in bone is always properly termed an osteomyelitis, although there is no evidence presented of pus or pus formation. The fact of the destruction or obliteration of the medullary canal in these cases, I do not believe is the whole factor, but I do believe for some reason or other the presence of granulation tissue and the destruction of the trabeculae in the bone, cause the venous stasis, or congestion, and probably account for the pain and disability in these cases.

The operation on these cases was apparently successful, but I believe the condition must be unique, which does not mean, however, that we should not look for it and recognize it when it occurs. It would be interesting in any follow-up series, or check-up in a number of cases of fracture of both bones of the leg, to have this condition in mind, see how frequently it happens, and whether it recovers spontaneously in any given time. The frank destruction, or apparent destruction of the medullary canal alone, I do not believe, is the sole factor, although the condition seems to be somewhat analogous to the thickened cortex and the narrowed medullary canal one finds in advanced cases of Paget's disease, associated with pain, and which are relieved by operation.

DR. ROBERT B. OSGOOD, Boston: Dr. Swett has called attention to the similarity of the phenomena he has studied to the sclerosing osteomyelitis reported by Garré in the Beiträge Zur Klinischen Chirurgie in 1893. (Zehnter Band, Zweiter Heft, pp. 241-298.) It will be remembered that in 1874 Poncet called attention to an observation of Ollier's of a periostitis with a clear exudate, albuminous in character, and without important signs of inflammation, to which the name "periostitis albumenosa" was applied. Cases of this nature have been reported from time to time. I remember encountering one over twenty-five years ago which subsided without operative attack. This rather rare condition has been given different names,—"periostitis ex sudativa", "osteoperiostitis sereuse", "plastische periostitis". Volkmann considered the lesion to represent a "lymph abscess", though most observers have considered the morphological process to represent a subacute hematogenous osteomyelitis involving chiefly the periosteum. Garré reports four cases of sclerosing osteomyelitis from three of which cultures of either staphylococcus aureus or albus were recovered, but in some animal experiments these cultures proved innocuous when injected into the knee joint and the periosteal cavity: evidently bacteria of low virulence. In no case of his was frank pus recovered from the lesions of the bone or from the sometimes accompanying joint effusions.

Garré suggests that the medullary occlusion may be of the nature of a central sequestrum and the microscopic findings of focal necrosis in the bone fragments in Dr. Swett's cases would suggest this conception also. In Garré's cases lues was thought to have been excluded as a possible etiologic factor and although, I think, Dr. Swett does not mention it, I fancy that it was ruled out in all his cases. But it is well to remember that this mocking bird of all bone lesions yields to a nonoperative attack. It is perhaps significant that Dr. Swett's first two patients had sustained their fractures from crushing rather than from leverage violence and that in his third case, although I believe no true fracture was ever discovered, a crushing injury had also been received which might well have severely wounded the periosteum. This is the tissue initially involved in the production of the lesions which have been so well described.

I am most glad of the opportunity to thank Dr. Swett for his interesting and well-planned discourse. A paper like this has real value which less thorough reports of supposed surgical curiosities often lack. The medico-legal importance of his findings is undoubted.

PRESIDENT JOHNSON: The discussion from the floor is now open.

DR. LYMAN ALLEN, Burlington, Vermont: This case may not be quite germane, but the medico-legal aspects were similar.

A young woman was injured in a dynamite explosion, with frank osteomyelitis of the tibia, but without fracture. After some eighteen months of pain and disability, she had great relief when a piece of the cortex was removed, leaving a slot perhaps half an inch wide and four inches long in the tibia. No fracture had existed.

The medullary cavity was not obliterated and there was no macroscopic evidence of osteomyelitis. The removal of this piece of bone and the opening of the slot relieved pain and enabled the patient to resume her occupation. I do not know whether the relief was permanent.

I have a feeling that the mere absence of a medullary canal alone probably does not cause the disability, and that the alteration in weight-bearing, while it may play a part, is probably not necessarily a factor in the disability. Interference with venous and lymphatic circulation, the relief of tension by the opening of a slot, and the alteration of the circulation in general, probably furnish the answer to the relief of pain and, therefore, the curing of the disability.

PRESIDENT JOHNSON: Is there any further discussion?

DR. F. J. COTTON, Boston, Mass.: I would iike to say, Mr. President and gentlemen, that I am rather inclined to agree with Dr. Sever and Dr. Allen. We see so many fractures in which healing is accompanied by obliteration of the medullary cavity.

I think this is a very interesting group of cases and would like to emphasize what Dr. Allen just spoke of, that is, the classifications in which, without fracture, trauma does lead to sclerosis of bone. There are a good many cases that we at one time classed as single ostitis fibrosa noncystic, which never meant anything, really, definitely not parathyroid cases, localized affairs, following a minor trauma.

There are certain specimens that we have been working over that show that this situation, of a sclerosing ostitis without any infection we can discover, but with small cysts, perhaps only one, is apparently originally of hemorrhagic origin. It seems perfectly possible that the bone may act to produce this sclerotic condition as a result of various stimuli. Certainly, it reacts in that way in those cases in which you will dig out a lot of bone and find a pinhead infectious focus without previous osteomyelitis in which you can recover staphylococci. It apparently will react in the same way to localized hemorrhage.

I think whatever the cause is, we get the same sclerosing thing which is talked of loosely as Garré's nonsuppurative osteomyelitis.

I think the pain in these cases is probably the sclerosis as such, rather than the question of what has or has not happened to the medulla.

I believe this sclerosis can come from a number of original causes.

DR. CHARLES P. CHANDLER, Montpelier, Vermont: I would like to add a word about the case that Dr. Allen has spoken about, because the patient is not well. He saw the case, I think, about a year ago and advised that a section of the bone be removed.

The patient was comfortable a while, but continued to run a low-grade temperature and a similar operation was done a few months later. Dr. Ober saw this patient last summer and advised removing the whole length of the top of the tibia between the two epiphyses. This was done and there were areas of sclerosis along the shaft, but there was no definite pus found and the laboratory report was staphylococcus.

That operation was done about two months ago and the patient now is complaining of pain above the epiphysis. She still runs this low-grade temperature. The wound is now practically healed. She has been a state case.

This injury originated from a dynamite explosion. The patient was living in a house about a mile from where the dynamite exploded. The windows blew in and she was quite severely cut. About six weeks after this injury, she developed this infection in the tibia.

I think the case is somewhat similar to those Dr. Swett mentioned, but, as Dr. Allen stated, I will have to agree with him, she is a long way from being well yet.

DIABETES EPIDEMIOLOGY FROM DEATH RECORDS

BY ELLIOTT P. JOSLIN, M.D.,* AND HERBERT L. LOMBARD, M.D.*

FACED with the problem of the inadequacy of death records in epidemiological studies, the authors have obtained an estimate of how closely the death records of Massachusetts approach the truth in ascertaining the epidemiology of diabetes. The items under discussion are age distribution, sex distribution, and duration, increase, and incidence of disease. Diabetes is comparatively easy to diagnose and with the exception of priority of the other diseases listed in the "Manual of Joint Causes of Death," the death records should portray the situation reasonably accurately. That this is not so is seen from the results of this study. Seven hundred and forty-four cases, which later died and which previously had been diagnosed as diabetes by Joslin, have been reviewed. The death certificates were signed by many different physicians as the majority of these patients died in their homes. The deaths occurred in two periods, 1926-28 and 1931-33, and the cases were so chosen as to be equal in number for both periods. No other method of selection was made.

The part of the series classified as diabetes on the death certificates represents about one

*Joslin, Elliott P.—Medical Director, George F. Baker Clinic, New England Deaconess Hospital. Lombard, Herbert L.—Director, Division of Adult Hygiene, Massachusetts Department of Public Health. For records and addresses of authors see "This Week's Issue," page 32.

thirteenth of the total diabetic deaths in the State. While the sample is small, it is believed that it is representative of the State. The series represents a cross section of the diabetic population in respect to geographical location, economic status, and nationality, and while reviewed by Joslin represents the cases of many different physicians.

Table 1 shows both the composite picture for the six years and the same divided into two groups with a five-year interval.

Of the total number of individuals who had been diagnosed diabetes, only 62.9 per cent were so classified on the death records. An additional 13.0 per cent of patients had the word diabetes written on the certificate but due to Joint Causes of Death were classified otherwise. Twenty-four per cent of the cases did not have diabetes on the records at all, and about half of these (13.4 per cent of the cases) would have been classified as diabetes if the word had appeared on the death records. This indicates that the reported deaths in the State represent 82.5 per cent of the deaths that should be thus classified by the Joint Causes of Death, and 62.9 per cent of the individuals who had diabetes at time of death.

In the first period, 1926-28, 27.9 ± 2.3 per cent of the cases failed to have diabetes written on the death certificates; in the later period, 20.1 ± 2.1—a difference of 7.8 ± 3.1. This difference is significant statistically and indicates a slight improvement on the part of physicians in certifying deaths.

Table 2 shows the classification of cases with diabetes written on the death certificates, and Table 3 the classification of those without diabetes written on the death records.

TABLE 1

CLASSIFICATION OF THE DEATHS OF 744 INDIVIDUALS WHO DIED WITH DIABETES

Group	1926-1928	1931-1933	Total
Diabetes cases	372	372	744
A—Classified as diabetes.	60.0 ± 2.5%	65.9 ± 2.4%	62.9 ± 1.8%
B—Had the word "diabetes" on the death certificate but were otherwise classified.	12.1 ± 1.7%	14.0 ± 1.8%	13.0 ± 1.2%
C—Failed to have the word "diabetes" on the death certificate. If they had, would ve been classified as diabetes.	17.7 ± 2.0%	9.1 ± 1.5%	13.4 ± 1.3%
D—Failed to have the word "diabetes" on the death certificate. If they had, would have been classified otherwise.	10.2 ± 1.6%	11.0 ± 1.6%	10.6 ± 1.1%

TABLE 2

CLASSIFICATION BY JOINT CAUSES OF DEATH OF PATIENTS WITH DIABETES WHO HAD DIABETES WRITTEN ON THE DEATH CERTIFICATES

	1926-28	1931-33
Diabetes	223	245
Cancer	18	25
Tuberculosis	15	8
Accidents	2	4
Others	10	15
Total	268	297

TABLE 3

CLASSIFICATION BY JOINT CAUSES OF DEATH OF PATIENTS WITH DIABETES WHO DID NOT HAVE DIABETES WRITTEN ON THE DEATH CERTIFICATES

	1926-28	1931-33
Cancer	22	28
Heart disease and coronary arteries	30	16
Pneumonia	3	5
Cerebral hemorrhage and embolism	10	6
Nephritis	13	3
Accidents	8	2
Others	18	15
Total	104	75

The age distribution of the groups B, C, and D (table 1) did not differ from Group A. In this item alone, the death records portray the actual results.

The sex distribution differed materially in the cases without diabetes written on the death records from the classified cases. The sex ratio in the State and that in the classified series were practically identical, but was much higher in the cases without diabetes written on the records. This indicates that a larger percentage of men dying with diabetes, than women, are not so classified. This would tend to make one doubt the sex aspect of epidemiology of diabetes as portrayed by the death records.

TABLE 4

SEX RATIO IN THE 1926-28 SERIES

	Males per 100 Females
Sex ratio of diabetic deaths in State	58
Sex ratio of diabetic deaths in Joslin's series classified diabetes	57
Sex ratio of diabetic deaths in Joslin's series with diabetes not written on death records	76

Table 5 shows a comparison between the duration of the cases classified as diabetes on the death records and from Joslin's files. In both the earlier and later period Joslin's records give approximately one year longer duration of the disease than is obtained from the death records for the same cases. The average dura-

tion of total diabetic deaths in Massachusetts for 1930-32 is considerably less than for the sample. These findings indicate that duration of disease from the death records is not an adequate criterion.

TABLE 5

AVERAGE DURATION IN YEARS OF DISEASE PRIOR TO DEATH

	1926-28	1931-33	1930-32
Joslin's series from files	7.3	9.3	
Joslin's series from death records	6.4	8.0	
Total Massachusetts diabetic deaths			5.1

The application of rates found in table 1 would give an estimated number of deaths both from and with diabetes, assuming the sample to be representative and providing that none of the deaths so classified in the Massachusetts reports were from other causes. As all physicians are familiar with at least one test for sugar in the urine, it is probable that the only error of this type would be that of classifying an individual having sugar in his urine as being a diabetic without the confirmation of a blood sugar test. In a short series of eighty-three cases which were classified as either glycosuria or potential diabetes and which later died, the death certificates recorded diabetes in 16.9 ± 4.1 per cent. In a series of 13,000 cases of suspected diabetes, Joslin finds 13.5 ± 0.3 per cent not true diabetes and 2.5 ± 0.1 per cent with no definite diagnosis, a total of 16.0 ± 0.3 per cent. Using the standard deviation as a measure of variation for each of the rates used, the resulting error in overstating the number of diabetic deaths would lie between 3.6 and 6.2 per cent. Assuming this error to be 5 per cent and applying the classification rate of the State Registrar, the average yearly number of deaths with diabetes in Massachusetts in the period 1926-28 were 1385 and in 1931-33, 1690—an increase of 22.0 per cent. This is much less than the increase of 33.8 per cent between the reported deaths of 870 and 1164. This points to the probability that the increase in diabetes is less than would be expected from the death records, although the size of the sample prohibits a definite conclusion.

As a further check on the accuracy of the estimated number of cases dying with the disease in 1931-33 (1690) a comparison has been made between the number of cases alive, derived from this figure multiplied by Joslin's duration, and the number estimated by Bigelow and Lombard in "Cancer and Other Chronic Diseases in Massachusetts." The resulting figures are 15,700 and 15,000, respectively. This strengthens the opinion that the number estimated as dying with diabetes is approximately correct and gives additional weight to the previous estimate of the incidence of the disease.

From the study of 744 cases of diabetes it is concluded that the mortality from diabetes as recorded in the death records represents about four fifths of the true mortality as measured by the Joint Causes of Death and about two thirds of the mortality of individuals with the disease. The differences found in sex ratio, duration, and increase of disease warrant the assumption that epidemiological studies based solely on death records may be greatly misleading in portraying the true picture of diabetes.

THE GEORGE W. GAY LECTURE ON "MEDICAL ETHICS"*

The Successful Doctor and the Human Side of Practice

BY JAMES B. HERRICK, M.D.†

AN invitation to address medical students is often an incidental matter, a sort of by-product of one's presence in the university city while on a professional visit or while in attendance at a medical meeting. "Won't you say a word to the students?" casually remarks one's friend of the faculty. "It makes no difference what you talk about. Even a few minutes will suffice. I'd just like to have the boys see you." That night during the wakeful hours in the Pullman one wonders whether the remarks that were made to the boys seemed as colorless and unsatisfactory to the students as to the speaker, who for a few uncomfortable minutes felt that he was on exhibition. The invitation to deliver the Gay Lecture, however, with notice several months in advance, with an assigned topic and that topic "Ethics" showed a deliberate choice that pleased

*Delivered before the medical students of Harvard University, November 7, 1935, under the endowment of Dr. George Washington Gay.

INTRODUCTION BY DR. HENRY A. CHRISTIAN

Of Dr. Herrick in 1924 when he had served as physician-in-chief pro tempore at the Peter Bent Brigham Hospital I wrote "a delightful personality with matured clinical judgment acquired in an extensive experience as practitioner, consultant, teacher and hospital physician."

In 1930 in presenting to Dr. Herrick the gold medal of the Association of American Physicians Dr. Kober termed him "one of the most distinguished clinicians in the United States" and "always a painstaking student of clinical symptoms and most accurate in his description of observed facts."

In his monograph on coronary thrombosis Dr. Levine says of Dr. Herrick he "first finally focused the attention of the American medical profession on this disease. In 1912 he emphasized the fact that coronary thrombosis was a clinical entity, could be recognized during life and that it need not end fatally." Under Dr. Herrick's aegis Fred Smith carried on the experimental work of ligating coronary vessels in the dog which is the foundation of our knowledge of the electrocardiographic evidences of coronary occlusion.

You, Sir, Dr. Herrick I present as our now universally recognized dean of clinicians, using the term not in its original sense of one set over ten but in the sense that all of us gladly acknowledge you as the leader among clinicians in this fair land of ours.

†Herrick, James B.—Professor of Medicine Emeritus, Rush Medical College of the University of Chicago. For record and address of author see "This Week's Issue," page 32.

me. I deeply appreciate the honor and am duly thankful.

Dr. Locke, as chairman of the Committee, wrote me that according to the Gay bequest the lecture was to deal with "medical ethics, economics, etc." I will not discuss medical economics for two reasons. In the first place the experience of the past six years leads me to question my qualifications. Secondly, there is available in the library the scholarly lecture of two years ago by Dr. Osgood. This lecture contains such an excellent résumé of this topic that for me to take it up today would be needless repetition. My subject, therefore, narrows down to "medical ethics, etc." You may perhaps think I am talking mainly about "etc." for my theme is really the successful doctor. I trust, however, you may see that there is included something that bears directly on ethics and especially when I discuss as one of the qualifications of success an understanding of the human side of practice.

Success is the attainment of one's objective, reaching the goal. It is "getting there".

But objectives vary and standards are not uniform. No two of you have exactly the same aims. Perhaps some of you decided to become physicians by a process of exclusion. You did not know what else to do which is, I trust you notice, a little different from saying you did not know what else you were good for. Some hope to gain money, reputation; some aim to be teachers or medical writers; some are attracted by the lure of research or by curiosity concerning biologic science, particularly the mystery of disease; some think that the busy life of practice will bring them what they especially enjoy, close contact with men of all types and conditions; some are genuinely altruistic and are eager to help those who suffer from illness. Motives, then, are different, no two exactly alike.

Objectives also are not fixed; they are constantly changing. The altruist may in time become the self-seeker after wealth or reputation; the investigator is transformed into the practitioner; the well-to-do practitioner ends his days as a teacher or writer, or as a charitably minded minister to the poor. These changes are by no means to be condemned for they may indicate progress and growth in mental and ethical development.

Let me cite two contrasting instances. An old acquaintance of mine had been sent to the United States by the church from an oriental country to be trained as a missionary doctor. Instead of returning to his native country he changed his mind and settled as a practitioner in one of our large cities. A year or so ago he came to consult me about his health. I asked him how he was getting on in practice. "Practice?" he said. "Why should I practice when I can make more money at poker or playing the races?"

A schoolmate in a preparatory academy went as medical missionary to China, became physician to the Empress dowager and head of a large hospital in Pekin. At about sixty-five, while on her sabbatical year in this country, she came to me for advice. Her Board of the Methodist Church had decided against her return because of evident cardiovascular disease. "I admit the existence of the disease," she said, "but I deny the wisdom of their decision. A letter from you stating that it will do me no more harm to work moderately in China than to live idly here will enable me to go back. Why should I not die helping the people I love instead of selfishly staying here in the vain hope that I may live a year or two longer?" I gave her the letter. She returned to China and for three happy years carried on her useful work, dying honored and revered by the people she had so faithfully and unselfishly served.

Need I point out the lesson? The first doctor was an ethical failure, a disgrace to the profession; the life of the second was one of which the profession may be proud, a true success.

It must be assumed that the doctor who is to be successful has a fair physical, mental and moral endowment, i.e., that he is in reasonably good health, is at least of average mental caliber and has a character that according to existing ethical standards is approved by one's fellows.

It must be admitted that some qualifications for success are outside one's control. All contestants start at scratch but they are not equally equipped. Heredity, environment, chance play a part. Some have by inheritance the qualities that go to make up a successful doctor. Some simply haven't the knack, just as some persons have no talent for music or mathematics. Environment and chance count. The young medical man thrown into association with studious, eager fellows catches their spirit and pushes ahead. Without this stimulating contact he may lag behind. Chance favors some, upsets the hopes of others. Disease, accident, financial reverses, unfortunate choice of location, family complications may be a hindrance to success, though, as is well known, what seems a misfortune is at times a blessing in disguise.

I have in my office desk photographs of the hands of a doctor from a western state—fingers twisted and deformed almost beyond belief by arthritis, metal rings to render more fixed some of the looser joints, corresponding changes known to be present in the feet. Yet in spite of this handicap the doctor was for years a successful, efficient general practitioner. When patients, lay or professional, complain unreasonably of their ill fortune in having arthritis or other retarding physical ailments, I some-

times show them this picture and tell the story. Or I cite the case of Dr. Robert H. Babcock, who, though totally blind from the age of thirteen, became a successful practitioner, a teacher and writer, well known in the field of diseases of the chest. Or I remind them of Franklin D. Roosevelt. I am surely not straying from my topic in referring to such subjects. Courage in adversity, and steady maintenance of the highest ideals are a part of nobility of character. Character and ethics are near of kin.

But admitting that success may depend in a measure on inborn physical and mental equipment, on luck, or influence, on an attractive personality, in the long run it depends first of all on hard work. I have never known a physician who in the true sense was successful who was not a hard worker. When Dr. Frank Billings was studying intensively the question of focal infections, he put us all to shame as at sixty years of age day after day promptly at eight he appeared at the hospital where he carried on his investigations. At the same time he was giving his clinics, acting as dean of the medical school, looking after a large private practice, and taking an active part in the meetings of many local and national bodies. If you have not already done so, read Osler's charming essay on "The Master Word in Medicine". The master key, he says, that unlocks the door leading to success is work. Systematic and well-planned work, call it plugging if you will, explains the success of a large proportion of successful medical men.

Too much dawdling is bad. To some English lads Lord Cromer of Egypt gave as a motto: "Love your country, speak the truth, do not dawdle." Vacillating doctors may resemble the chameleon who said he, "nearly busted" trying to change color as he walked from place to place on the Scotchman's plaid. Take time. It has been said that the American's notion of progress is moving rapidly in the direction in which one is going. The race is not always to the swift. Speed is as often a sign of mania as of progress. Fuss and pother and making motions do not always mean productive activity. Remember Chaucer's Sergeant of Law,

> "Nowher so bisy a man as he there nas,
> And yet he semed bisier than he was."

To succeed you must know your subject, and this means study. Study of textbooks certainly. But even in your undergraduate days you should learn the supreme value of monographs, original articles, current medical and other scientific journals. Only in this way can you be trained in the ability to judge for yourselves the value of what is written, to distinguish fact from theory, hypothesis or the mere guess—and not a little that is in print is of this latter character. "To know by heart is simply not to know." "Let the boy examine and sift everything he reads, and take nothing on trust or authority," said Montaigne more than 300 years ago. Yes, such ideas, though old, will stand repetition.

So read the promising new, the approved classics of the past. Read by cases, by subjects, e.g., diseases of the blood or of the bone. If attracted by any one subject, read exhaustively and ponder over it. You will acquire in this way a sense of mastery. You will learn the meaning of thoroughness. A thin spread of knowledge of a great many things spells mediocrity. The mediocre man is the dangerous man in the community. He does not know the limitations of his own knowledge or those of others, the risks of operation or of drug, the healing power of nature. Book knowledge is indispensable. It means work and more work in the library. And blessed result of it all, such work becomes your daily joy!

But you cannot be good practitioners unless you are constantly in touch with patients. The bedside in the home or the hospital is the laboratory where, by experience, you acquire knowledge and learn how to apply it. By all means grasp at the chance to become connected with a dispensary or a hospital. Generally only one with concentration of time and energy is better than two or three. Welcome the opportunity or compulsion to teach. No man is aware of what he knows or believes until he has tried to tell someone else about it or to write it down. Join a medical society. When you have something to say and only then, speak. Take a medical journal. Dr. N. S. Davis, founder of the American Medical Association, in the third week of his practice, though poor, sent in his subscription to a journal.

All this means that even with few patients the hours are being profitably spent. There are so many who do not do this. They are waiting for something to turn up, something to come their way. There are many faultfinders envious of those who succeed. They whisper of the use of influence, of luck, even graft. The fault so often is not in their stars but in themselves that they are underlings. They are idlers. And one effect of all this study at the desk, in the laboratory and at the bedside is that it keeps you always a little ahead, always ready for more than you are now doing. In this way promotion comes because it is deserved. This was one of Pasteur's oft-repeated sayings.

It is not enough, however, that you should "have the goods". You must be able to deliver the goods. This is the art of medicine as contrasted with the science. It means knowing how to apply your knowledge; more important, it involves knowing when to apply it. Or to put it in another way, technic is not all of the art. One of my colleagues, a leading otolaryngologist, has a telling way of expressing this truth. He says he can in a few weeks teach a

graduate student how to perform a mastoid operation; it takes months to teach when to do the operation and when to refrain. Some doctors are honest, industrious, well-informed, even erudite, yet they fail. They lack good judgment and tact. Tact, as you know, means "touch". These men do not understand, and therefore do not get in touch with, human nature. They are not good salesmen; the other fellow who may not know so much gets their patients.

Guard against trying to acquire the art by too much conscious or unconscious imitation. Very properly you have your medical models, your heroes. In striving too zealously to follow their example you may become mere imitators, copying externals rather than fundamentals. The result is apt to be that you acquire only mannerisms. Be careful to avoid traits of even famous doctors when you are conscious that these traits are foreign to your nature and for you, therefore, non-assimilable, or that they are grounded in moral or intellectual weakness. Intellectual honesty and moral integrity are after all closely allied. Older men may teach you by informing as to facts, by inculcating lessons drawn from experience, by illustrating proper methods of thought, by stimulating you by wise advice; but also—and of this your elders may be blissfully ignorant—by showing you by example how not to do it.

A word as to research. Real investigators are rare, i.e., those who can originate and independently carry on research. These men frequently make poor practitioners. Conversely, the practitioner is seldom a man of research in its highest sense. But the spirit of research is no monopoly of the laboratory of experimental physiology or pathology or biochemistry. It is, and should be, found in the successful practitioner whether in the hospital or the home. He should have the curiosity that Lord Kelvin had when he so frequently exclaimed: "Now, what's the go o' that?" Each case of disease is a problem for investigation. In trying to solve this problem of a case or a group of cases, the doctor may add to his own knowledge and perhaps to that of others. He has at least been stimulated to habits of more thoughtful and careful observation. To repeat, the spirit of research is the activating agent, the catalyzer of progressive and productive practice. It is a mistake to set up a real or a fancied barrier between research and practice. Many an investigator would do better work if he were not too fanatically wedded to the dogma of research for truth's sake alone and if he knew more of the problems of practice. Many a practitioner would be awakened to a new life if he were not wedded to the belief that experience, intuitive hunches, practical results were the all in all of medicine or if he were not so timid as to think he dare not enter the sanctum sanctorum reserved for research. Some of these features of research and others that I have not touched upon may be found in Dr. Minot's excellent article on "Clinical Investigation" that appeared in the *Journal of the American Medical Association,* August 31, 1935.

Thus far I have tried to show that while success may depend in a measure on qualities that are inborn, on chance and environment, the main requirements are character, hard work, persistent study, daily contact with patients, all of which activities are permeated by the spirit of research. I wish now to take up another phase of the subject.

A physician's true success is estimated largely by what is commonly spoken of as service or what he does for others. This feature is inherent in the conception of medicine as a profession and not a trade. The distinction is not easily made for the legitimate income-earning and the professional factors overlap at many points. The physician is consulted for his opinion and not for wares that he sells from his shelf at a profit. He does not take orders, he issues them. The doctor, lawyer, priest, teacher, architect touch on something other than the material. They are motivated by the idealistic, artistic, altruistic, ethical. All this is implied by the term "profession".

The minister sees people at their best, the lawyer sees them at their worst, the doctor sees them just as they are. To no one more than to the physician is there offered the opportunity for service, to no one more than to him is the incentive to service more impelling. Rightly to embrace the opportunity to respond to the incentive the physician should possess a dual personality. He should be intellectually—or, as it is oftener expressed, scientifically—minded toward the disease but sympathetic or human toward the patient.

The training of the physician even in his premedical courses and as far back as to the secondary school leans toward the practical and scientific rather than toward the human attitude of mind, the attitude of emotion and sentiment. Geography is concerned more with the height or mineral content of the mountain than with the magnificence of the view when the peak is scaled. The imagery of Vergil and his portrayal of human motives are largely lost in stressing scansion and grammatical construction. History discusses the strategy of the campaign and the plan of the battle, but overlooks the suffering of the wounded and the desolation of homes. So, in his biologic study of the frog, the guinea pig and of man, the student continues to use the same yardstick that he used in solving his problem in the relatively dead or insensate mathematics, physics and chemistry.

In a measure this is necessary and as it should be. The practice of medicine is becoming more and more exact. The doctor who is oversympa-

thetic, i.e., in the derivational sense of the word "suffering with" his patient, may be lacking in the intellectual or unemotional qualities that are prerequisites of good judgment. This may be fatal to the patient's best interest. The scientific physician, on the contrary, may be callous to human suffering of mind as of body. This is wrong, is frequently harmful to health, and is not necessary. In fact it is not so common as it is often thought to be, for most doctors are at heart sympathetic. Dr. John Brown in "Rab and His Friends" describes the loud laughter with which the students greeted the poor Scotch peasant woman who entered the clinic. The odd dress and strange manners of herself and husband were too much for them. But when they saw the hard cancerous breast, the courage with which without anesthetic the patient submitted to the operation, the tender devotion of the rustic husband and the courtesy and kindliness of the surgeon,—none other than the renowned Syme,—tears coursed down their cheeks and as the brave little woman was wheeled away, the amphitheatre rang with applause. I quote Dr. Brown's comments: "Don't think them (the students) heartless; they are neither better nor worse than you or I; they get over their professional horrors, and into their proper work; and in them pity, as an *emotion*, ending in itself or at best in tears and a long drawn breath, lessens,—while pity as a *motive*, is quickened, and gains power and purpose. It is well for poor human nature that it is so." There is the lesson, pity as a motive.

We must all be on our guard lest enthusiasm over the strictly medical aspects of the illness leads us to forget the patient. "Doctor", a new patient said to me, "I do hope you will be different from the other doctors whom I have consulted. I trust you will look less at the x-ray picture and more at me." The busy attending man with his following of students and house staff was bustling down the ward to see the interesting case at the end of the row of beds. The Irishman in bed one leaned over to the Swede in bed two and said, "Ole, we ought to be a hell of a lot better. The professor has just walked by." There is a practical sermon on ethics in those two incidents.

You may not in your undergraduate days appreciate the force of what I am saying. It may be that the real meaning of the human side of practice will not come to you until as the family doctor you enter the home where with no intern, no attending man, you must shoulder the full responsibility for the treatment of a serious illness. You are making your evening visit on the man with pneumonia. He is an interesting case. You record with care the physical signs, the blood count and the blood pressure. You are leaving the final directions for the night. The patient's breathing is rapid and labored, the delirium is marked. As he moans with the pain of the cough you note the look of anguish on the face of the young wife who stands near with the two year old hanging to her skirt. There are signs that another baby will come soon. Suddenly you sense it all. The loss of this husband, this father, this wage-earner means not only a broken heart. It means wrecked hopes, a shattered home, the wife the future wage-earner. You say, you scarcely know why: "This may be a critical night; I will stay." You have unconsciously transmuted your emotion into an act of service. The look of gratitude from the dim eye of the wife is your ample reward. You have learned something of the human side of practice. The patient is a case, to be sure, but the case is a man.

In present-day conditions of practice this feature is easily forgotten. There are fewer of the old type family doctors who, though perhaps possessing less science, were often rich in the qualities that made them the family advisers, confidants and friends. There are fewer real homes and more apartments. Yet whether he is in his cramped apartment, his private room or ward in the hospital, he is the human being sensitive to pain, fearful of, and not understanding, illness, dreading death, responsive to kindness and hurt by indifference or harshness. The doctor's dual personality must not be lost even though the family doctor is largely displaced by the hospital attending man.

Perhaps there is no call for me to discuss these topics before a class of Harvard students when your own teachers by precept and example keep this phase of medicine ever before you. And less reason for my so doing when there still pervades your class rooms, laboratories, and wards the benign influence of that rare spirit, Francis Peabody, who by act and word so perfectly exemplified the dual personality of the physician.

Every doctor aims to be honest. Yet one of the difficult things in practice is "to tell the truth". Patients consult us for our opinion and for advice as to treatment. Are they not entitled to the truth? Yes, but what is the truth concerning an illness? Suppose I say to a patient that he has tuberculosis or a leaky heart valve. I have told the truth as to diagnosis. But if the tuberculosis is curable; if the valvular lesion is not inconsistent with length of years, in reality I may have uttered a falsehood. For tuberculosis may mean to the patient "quick consumption", and a leaky valve may be synonymous with sudden or dropsical death. My bald, naked truth is an untruth. You see what Emerson meant when he said, "It is not the fact that imports, but the impression or the effect of the fact on the mind." Besides, no one is infallible as to diagnosis or prognosis. The serious case may turn out better than I think.

The supposed cancer may be an ulcer or diverticulitis, or it may melt away under iodide or arsenic. The patient is entitled to at least an explanation of what is implied by my diagnosis and to a modicum of hope that the illness may not be so serious as it seems to be or that modern treatment may help or cure. Lawrence Henderson, in discussing the problem of Physician and Patient as a Social System—and in a more penetrating and philosophical manner than I—expresses similar sentiments when he says: "Do as little harm as possible, not only in treatment with drugs, or with the knife, but also in treatment with words."

We doctors too often forget that patients do not always grasp our meaning because we employ language they do not understand.

I could not convince a man of sixty-five that the trace of albumin in his urine was not of serious significance. On his report from the bureau of analysis was the finger, rubber-stamped in violet ink, pointing to the word *albumin*. This outweighed all my reassurances. One day I said: "Why do you not worry about your wrinkles and your gray hair?" "Why, doctor," he said, "am I not entitled to have gray hair at sixty-five?" "You are," I replied, "and so you are to have a trace of albumin in the urine. Your trouble is simply gray hair in the kidney." I saw him no more for two years, when he again came to see me. "You don't remember the circumstances, doctor, but I was upset by your statement. I went to another doctor who promptly found Bright's disease. When he asked me what your diagnosis had been and I told him 'gray hair in the kidney', he was indignant and furious. He said he had never heard such a fool diagnosis in all his life. He had always thought Dr. Herrick, etc." *Haec fabula docet*: Beware of using figurative language in speaking to a patient who is literally minded.

The doctor, then, is to be human, sympathetic, helpful, always regarding the interests of the patient as paramount. This implies what is called character and a high standard of conduct or right thinking. Of such is the essence of ethics. So important is this in the conception of the best type of physician that there have prevailed even from the time of Hippocrates—with the well-known oath—to the present, rules of conduct often spoken of as codes of ethics. In order not to dictate in too arbitrary a manner, the American Medical Association prescribes the principles of ethics rather than the code, infringement of which may bring censure or more severe punishment to members of this national organization. These principles have to be modified from time to time to meet more explicitly the needs of changing conditions. Basically they are founded on the assumption that medicine is a profession not a trade; that a patient is a sufferer to whom the humane physician must offer help and that all physicians are members of a brotherhood, bound by mutual ties of friendship and helpfulness and not separated by barriers of enmity. Boiled down, the ethics of medicine is contained in the golden rule: "Whatsoever ye would that men should do to you, do ye even so to them."

I shall not discuss in detail the various features of ethics. Dr. Osgood, Dr. Robey and others have well covered this ground in previous lectures that are in print. The puzzling question is often before the practitioner, What is proper under the circumstances? The answer may generally be found if he puts himself in the other's place. If he were the patient, what would he like to have done to him? If he were the other doctor, what treatment by his colleague would seem proper and friendly? An appeal to conscience is generally better than an appeal to the printed principles or to an official body of a medical society. Conscience will generally be found deciding in accordance with the printed precept.

Among features that deserve mention, some of them relatively trivial to be sure, are such things as avoidance of gossip, promptness in response to calls or at consultations, consideration for others' convenience, courtesy in converse, clearness and explicitness in giving directions, assumption of responsibility for risk in treatment or even for error of judgment instead of throwing the onus on the helpless patient or weaker colleague; the wickedness of getting the other man's patient by direct or indirect offensive advertising, or of injuring another's reputation by unjustified comment or innuendo. Much might be said, and it would be especially appropriate at the present time, as to fees and the burden of the high cost of medical care. Secret splitting of fees is to be condemned. There should always be consideration of the patient's ability to pay. The pound of flesh attitude should be foreign to the doctor.

How shall I close this talk that has been, as I am acutely aware, not only informal but incomplete? Perhaps after having looked backward and having surveyed conditions of the present, I may appropriately venture to forecast the future. I do this optimistically. There are many *laudatores temporis acti* who are past the psalmist's three score years and ten, and others who are yet young, who are disheartened by the difficulties encountered in these last few years of storm and stress who believe that medicine has seen its brightest days and that the doctor of the future will be less successful, less honored, less useful than his predecessors, and less high-minded. This gloomy view is unwarranted. As a science, medicine is far from exact or complete. There is still an enormous field for study. New facts and new principles await investigation in the laboratory and at the bedside. Cancer, many infections, endocrines

and scores of other problems await their Harveys, Pasteurs, Kochs or Theobald Smiths. The practice of medicine is still too empirical and crude. New instruments and new laboratory tests will make diagnosis more exact. Preventive medicine is still in its infancy. Dietetic and specific drug therapy will be more accurately and effectively applied. Psychology will be more sensibly and more successfully employed. Surgery will have triumphs as yet undreamed. Social and economic relations may radically change. The individualism of the practitioner may, for a time, seem to be lost in the group or in the imposed authority of the State. But whatever the status of medical science, or the imposed obligations of Society, from out this unknown future there will surely emerge, as long as disease exists, two figures, the physician and the patient constituting the social system of Henderson. Then as now this doctor must maintain most intimate relations to his patient. Then as now there must be heard the words "my doctor", "my patient". This doctor, if successful in the true sense, must possess the dual personality, he must be scientific and human or humane. He must know his facts and the principles underlying them, and have the ability to apply them in treating the sick. In addition he must have that touch of nature that makes the whole world kin and that enables him to see in the sufferer from disease a man and brother. In a word he must, and I believe will, be a man of character, which means a man of right living. And this, as I understand it, is ethics.

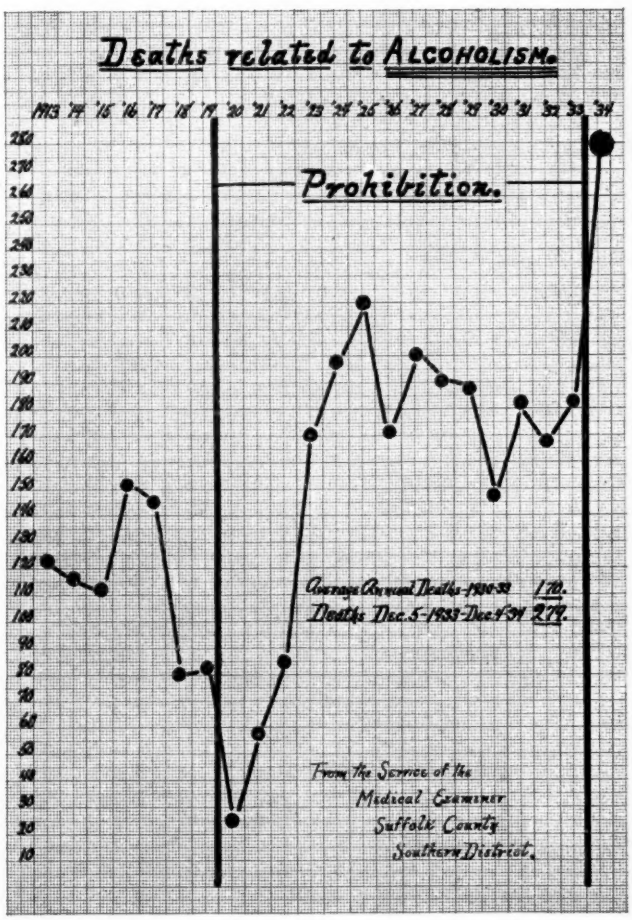
THE DEATH RATE FROM ALCOHOLISM

BY TIMOTHY LEARY, M.D.*

THE accompanying chart illustrates graphically a situation with reference to alcoholism which has become a serious menace. This chart records the deaths in which alcohol has been an important agency coming under my observation as Medical Examiner of Suffolk County. Most of the deaths have been directly due to alcoholism as such. The added cases include a percentage of alcoholic pneumonias in which the alcoholic factor was of primary importance, a percentage of cases of fractured skull in which the degree of alcoholism was extreme, and was responsible for the violence, as from a fall, which led to the fracture. The list does not include deaths from automobile accidents since in doubtful cases it was difficult or impossible to differentiate the influence of the alcohol and that due to the traumatism. The criteria as to what should be listed under alcoholism have not changed to any measurable degree during the period recorded.

There are many types of observation which can serve as bases for judgment on the extent of the alcoholism in a population. The records of arrests for alcoholism and the hospital admissions for this cause are valuable, but in the final analysis the number of deaths arising out of alcoholic intoxication furnishes perhaps the best barometer of alcoholic overindulgence.

As seen by the chart the deaths related to alcoholism in this service were on a relatively standard average basis in the years 1913, 1914 and 1915. The years, 1916 and 1917, were those of prosperity, the silk shirt period, when war loans had financed production and workers were well paid. In 1918 and 1919 we were preparing to and had entered the war. It was no longer fashionable to get drunk and the man who drank had difficulty in getting or



holding jobs. Under the influence of a patriotic urge we became one of the most temperate people in the world. Then came prohibition. In 1920 no liquor was available. The stocked liquor was shortly used up and new sources of

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supply were not as yet organized. In 1921 and 1922 deaths for a considerable part were in individuals who had resource to bathing alcohol, extracts—jamaica ginger, vanilla—perfumes and bay rum. By 1923 the bootlegging business was well established and sources of supply were many. The eleven years from 1923 to 1933 inclusive mark the period of activity in bootleg products. Smuggling of concentrated alcohols was no more difficult and was more remunerative than the smuggling of beer and wines. The illicit distillation of alcohol flourished. We developed in the public a taste for beverages with a kick which could only be satisfied by concentrated alcohol. It will be noted that there is a more or less progressive downward trend in the death rate during these years. We were gradually settling down toward a standardized but relatively high death rate.

Prohibition was abolished Dec. 4, 1933. In the State of Massachusetts the local alcohol control system permitted the sale over the counter by druggists of 95 per cent alcohol (190 proof). This is in contrast to the practice elsewhere. In New York State, for example, a physician's prescription is necessary for the purchase of ethyl alcohol. The usual drug store price for ethyl alcohol is eight ounces for a half dollar. During the year ending Dec. 4, 1934, there was a tremendous rise in the death rate. This, in my opinion, based upon evidence of what the decedents had been drinking, was due in very large part to the drinking of ethyl alcohol. Diluted properly perhaps at the beginning of a drinking bout, the fluid came to be drunk with less and less attention to dilution until delirium or unconsciousness supervened and treatment was of little or no avail. It requires but 0.6 per cent of ethyl alcohol in blood and brain to bring about a fatal issue. Quantity and concentration are both factors of importance. The human body can oxidize about 10 cc. of ethyl alcohol per hour. The absorption of alcohol in these cases takes place more rapidly than oxidation can destroy it. The accumulation of the drug within the tissues gives rise to dangerous percentages often before the victim succumbs to sleep or delirium.

The increased death rate in this district following the abolition of prohibition is in contrast to the lowered mortality reported elsewhere throughout the country, notably from New York City. It is a reasonable conclusion that the readiness with which ethyl alcohol can be purchased over the counter in drug stores in this state is a factor in this local increase.

FURTHER EXPERIENCE WITH THE FRACTIONAL 'PHTHALEIN TEST

BY EARLE M. CHAPMAN, M.D.*

KIDNEY function tests that require the prolonged coöperation of the patient with regard to diet and fluid balance or the expense of chemical analyses do not conveniently serve the purpose of estimating kidney function in routine practice. Our continued use of the fractional 'phthalein method of estimating kidney function leads us to believe that it is both practical and reliable. In 1933 Chapman and Halsted[1] described the use of this test in forty-three cases including hemorrhagic, arteriosclerotic and degenerative Bright's disease.

Four years of experience with this test have established it as a routine procedure in the wards and in the out-patient department of the Massachusetts General Hospital. The technique is simple. The patient empties the bladder, drinks two glasses of water and one half hour later 1.0 cc. (6 mg.) of phenolsulphonephthalein is given intravenously. In a normally hydrated person voided specimens of urine are then easily obtained fifteen and thirty minutes after giving the dye. The whole test occupies one hour and the results can be read immediately with the standard colorimeter (Hynson, Westcott and Dunning). The one and two hour specimens are no longer obtained as we have shown that the curve of dye elimination with a high initial output (normal minimum 25 per cent) is the significant feature of 'phthalein excretion. One third of the forty-three patients with Bright's disease had a total dye output of 55 per cent or more by the old method of hourly collections yet in each there was a delay in the dye excretion shown only by the fractional method. This delay, reflected chiefly in the fifteen minute output, indicated an impaired kidney function.

Our further experience is recorded here for convenience in figures representing the curve of dye excretion in normal persons and in patients with acute and chronic hemorrhagic Bright's disease. As this is the most common type of Bright's disease it alone is used for illustrative purposes.

Chart 1 shows the average curves of normal dye excretion, the line A-B representing forty tests on twenty normal individuals. A Duboscq colorimeter was used. The line C-D represents the average of twenty-six tests on twenty-six ward patients without renal disease done routinely by interns using the standard colorimeter. It is evident that the latter method is sufficiently in agreement with the more accurate colorimetric determinations to permit its use as a reliable test of kidney function. Fluid intake[1] or anemia[2] does not alter the dye excretion.

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Chart 2 represents the course of acute hemorrhagic Bright's disease in a fourteen year old boy. He was very ill with sudden hematuria and edema and had hypertensive encephalopathy (convulsions) at the onset of his illness. He improved slowly and then after the tonsils were removed the improvement was rapid. He is now in the latent stage, having only a very slight trace of albumin in the urine. Here the fractional 'phthalein test reflects the diminished function that occurs in acute hemorrhagic disease and coincident with clinical recovery we see that the 'phthalein output has returned to normal. This case is illustrative of the eight additional cases of acute disease we have observed in the past two years. However four of these showed a return of kidney function only to subnormal levels as they entered the chronic active stage of the disease.

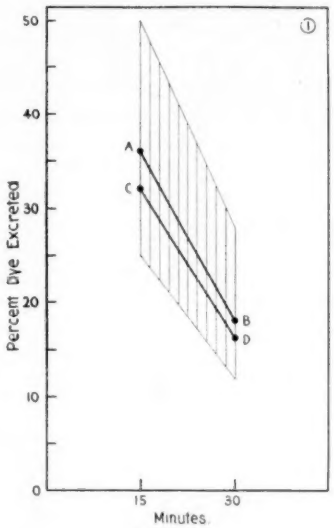


CHART 1.

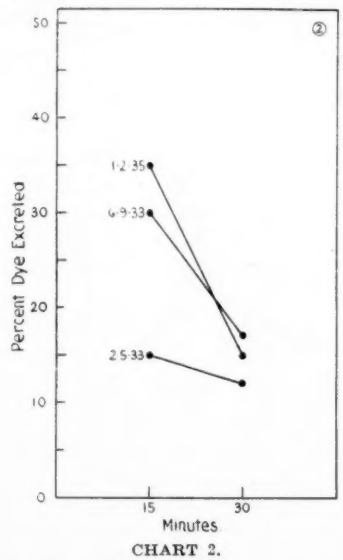


CHART 2.

Chart 3 shows the average curve of dye excretion of thirty-one patients who entered the hospital with chronic active hemorrhagic Bright's disease not in the terminal stage. We believe that this test is of particular value in estimating the kidney function of patients with progressive Bright's disease. The increasing damage to the functioning tissue is shown chiefly by a decrease in the fifteen minute output of dye. By the usual hourly method MacKay[3] states that the 'phthalein test may be normal until at least half of the functioning tissue has been destroyed.

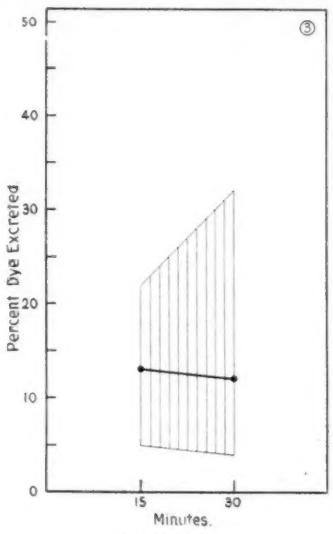


CHART 3.

Chart 4 shows the course of a patient with progressive kidney disease. This was a sixteen year old girl who first entered the hospital with the acute disease and progressed through the chronic active stage to the terminal event in uremia. Necropsy eight months after the last recorded test showed that she had diffuse glomerular nephritis. Here we see the progressive decline in kidney function over a period of two years reflected mainly in the fifteen minute dye output. It was not until six months after the last test that uremic symptoms appeared.

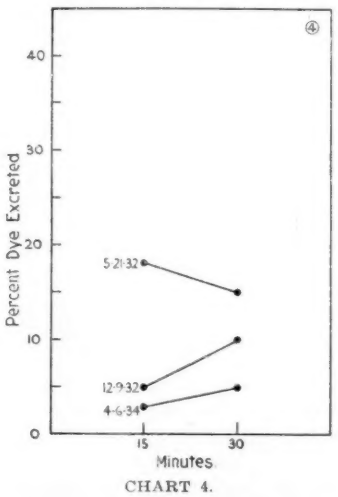


CHART 4.

From this and similar cases we have attempted to govern prognosis. It would be hazardous to offer a graded prognosis on the basis of this test alone but we have followed seventeen patients with progressive Bright's disease who lived an average of six months after they could excrete less than 5 per cent of dye at the fifteen minute interval. Clinically some of these patients seemed surprisingly well but none lived over twelve months with this degree of kidney damage.

Like other clinical tests of body function a single fractional 'phthalein test is not to be accepted as proof of impaired renal function unless it forms a part of the clinical picture. Particularly in congestive heart failure with a diminished blood flow through the kidneys the 'phthalein excretion is so delayed as to be of little value in estimating renal function. The reverse of this has been observed in cirrhosis where the 'phthalein output may be unusually high because of the inability of the damaged liver to excrete the usual 15-20 per cent of the dye. In the nephrotic stage of Bright's disease the dye output may be normal until late in the course of the illness. During this same period we have observed that other tests of function have also failed to indicate kidney damage. The explanation for this is not clear.

To estimate the accuracy of the fractional 'phthalein test we have done comparative tests of urea clearance[4] on thirty-eight individuals with varying amounts of renal damage. Chart 5 shows these comparative tests. The 'phthalein test is charted against the abscissa, the per cent of dye excreted in fifteen minutes, while the standard urea clearance expressed in per cent of average normal function is plotted against the ordinate. Excepting those tests marked with a cross the two methods compare favorably. (See upper left and lower right sections of chart 5.) In five instances (upper left square) the fractional 'phthalein test alone indicated impaired kidney function.

CONCLUSIONS:

The fractional 'phthalein test is a practical and reliable method of estimating kidney function. It reflects the changing function of the kidneys in acute hemorrhagic Bright's disease and the progressive decline in function in the chronic active stage. Its possible prognostic value has been indicated and its limitations discussed.

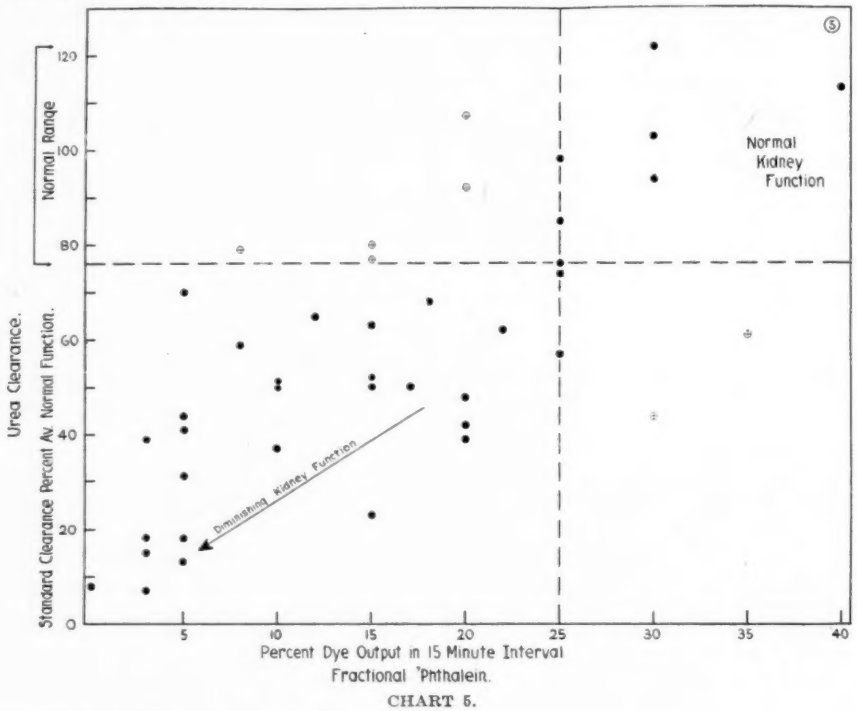
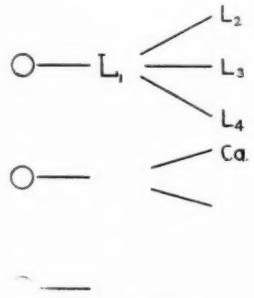


CHART 5.



CHARTS 1 TO 5.

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THE TEACHING OF GYNECOLOGY AT THE NEW ENGLAND MEDICAL CENTER

BY LOUIS E. PHANEUF, M.D.*

THE Boston Dispensary, established in 1796, has always maintained large out-patient clinics where teaching has been conducted for a great many years. In 1929 the Tufts College Medical School, the Boston Dispensary and the Floating Hospital combined to form the New England Medical Center and at that time the gynecological clinic was organized for the purpose of teaching Tufts medical students. During the past year, 1934, the total number of women treated in the gynecological clinic was 2209 and the total number of visits was 8928. It is felt at Tufts College Medical School that the teaching of gynecology to the third year class should consist largely of the examination of patients and the carrying out of clinic or office procedures. It is further felt that except for seeing living pathology the third year students get very little out of witnessing involved pelvic operations, because on the one hand, this form of teaching is too far advanced for them, and on the other hand, operations performed deeply in the pelvis are difficult for them to see. A vote recently taken at the Tufts College Medical School shows that the undergraduates favor out-patient work. During the fourth year an elective course in gynecology is available. One member of the class is assigned for a month to the general clinic at the New England Medical Center, where he works as a regular assistant under supervision.

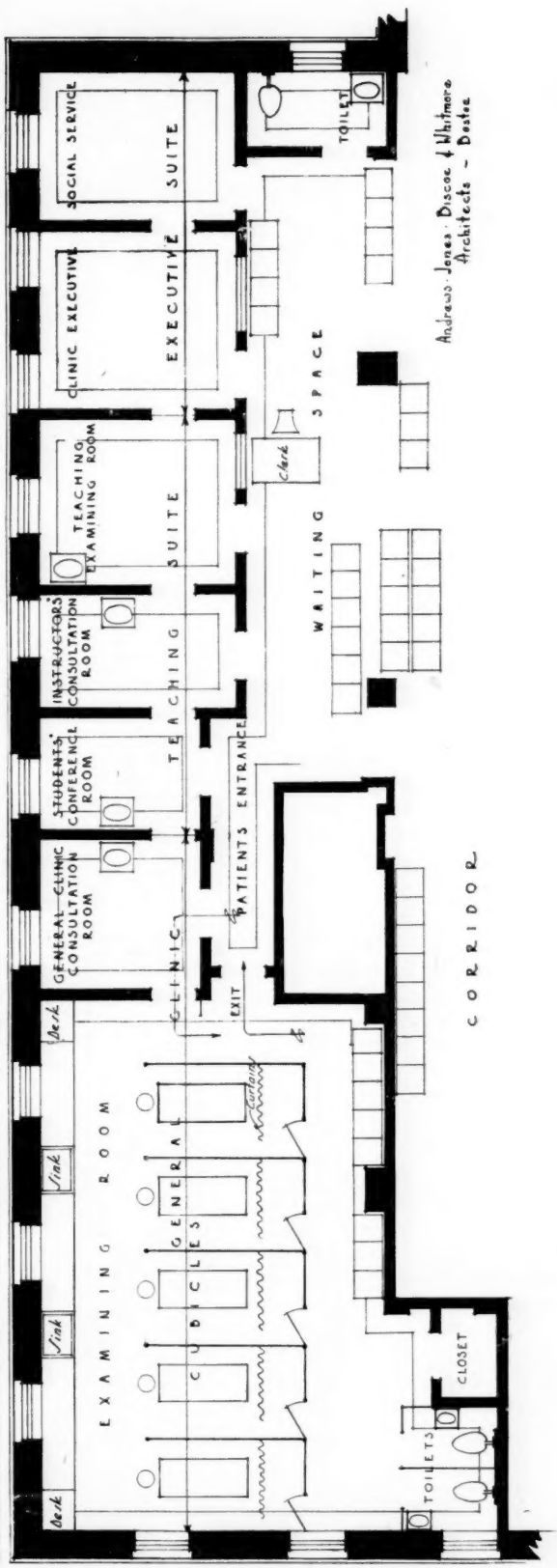
In order to utilize the large amount of material available, the floor plan has been designed according to the following drawings furnished by the architect.

The daily teaching clinics are carried on as follows:

The patient enters the consultation room where the history is obtained by the instructor; she then enters the examining room and is draped. In the meantime the history is discussed with the members of the section. The next step is the examination, first by the instructor and then by the students. After the examination the necessary advice and treatment are given. The group then adjourns to the conference room where further discussion of the case takes place with the idea of clarifying anything that may be vague.

While the teaching is going on other members of the gynecological staff treat the patients in the general clinic, and lesions of unusual interest are demonstrated to the student group. The teaching does not in any way interfere with the progress of the general clinic, which is a unit apart from the teaching suite, as shown by the drawings.

A large number of patients, representing a wide variety of gynecological conditions, are



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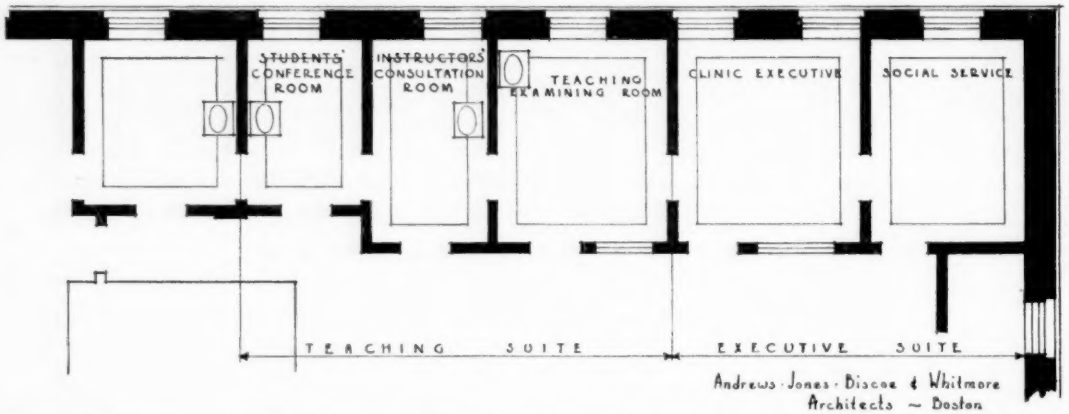
seen during a forenoon. The normal conditions are readily compared with the abnormal and the student has the opportunity of applying the knowledge gained from his lectures at the medical school in the discussion of the diagnosis, differential diagnosis and treatment of each individual case.

First hand experience and individual instruction are obtained by the students, there being three, or occasionally four, assigned to one instructor. The common variety and the rarer gynecological lesions are simultaneously encountered, emphasis being placed upon the more common lesions which these undergraduates will more frequently meet in their later private practice.

Clinical lectures have been given for the past three years. These are held in the latter part of the second semester, once a week for eight weeks, during which time eight important subjects in gynecology are discussed, with the presentation of patients. Each member of the class receives a mimeographed copy of the history, examination and laboratory findings. The diagnosis, differential diagnosis and treatment are purposely omitted and are brought out in the discussion.

Large fibroid tumors or ovarian cysts are marked out on the abdomen with a skin crayon and may be readily demonstrated to the class. With the patient properly draped, and her eyes covered with a towel, a procidentia may be shown without embarrassment to her. Large cystoceles or rectoceles may be seen, together with similar conditions which have been repaired by plastic operations, thereby demonstrating the "before" and "after", and the general condition of patients who have been treated for malignancy, either surgically or by irradiation may be brought to the attention of those present.



This form of teaching in our hands has proved to be very satisfactory.

I wish to thank Mr. Frank E. Wing, Superintendent of the Boston Dispensary, and the architects, Andrews, Jones, Biscoe and Whitmore, for their coöperation in furnishing the architects' drawings.

ELIMINATION OF POSTOPERATIVE PAIN FOLLOWING HEMORRHOIDECTOMY

BY NATHANIEL J. SIMMONS, M.D.*

THE general practitioner is confronted with few conditions that cause more acute suffering than prolapsed hemorrhoids. The palliative treatment of this anorectal condition by means of suppositories or salves is of no avail in cases where the disease process has resulted in organized tumor formation. The injection treatment has been of inestimable value for moderate sized bleeding and protruding varicose and capillary internal piles but should never be employed when hemorrhoids are large and hypertrophied, acutely inflamed, strangulated, extensively ulcerated, or when the patient suffers from complicating rectal diseases. Therefore a large percentage of hemorrhoids must be operated upon if the patient is to be relieved.

Many individuals fear a hemorrhoidectomy because of the postoperative pain. Their fears are not unfounded. The pain following this proctological procedure is caused by the sphincter muscles contracting down on the fresh wound, the irritating discharge, the pressure pain against the sphincter muscles on the first evacuation of the bowels, the possible necessity of catheterization or a combination of several of these factors. The surgeon's duty is to eliminate so far as possible these conditions.

The problem which confronts the proctologist is to find a local anesthetic that will render rectal surgery painless or practically so for

*Simmons, Nathaniel J.—Assistant Surgeon, Out-Patient Department, Beth Israel Hospital. For record and address of author see "This Week's Issue," page 32.

several days following the operation. If we can assure the patient that the postoperative pain can be mitigated, then rectal surgery will become one of the operative procedures which will not be unnecessarily postponed.

A good local anesthetic must first of all possess a specific affinity for nerve tissue and be retained at the site of injection long enough to perform the operation. The analgesic agent must paralyze the nerve tissue at a low concentration without poisoning the other tissues, and the change brought about in the sensory nerve must cease after a certain time without leaving any aftereffects. It must be taken up by the circulation in a detoxified state. When the anesthetic solution is injected, it must not irritate or cause pain, which is also one of the requirements after its action has ceased. It is also important that the solution does not decompose during sterilization.

Various local anesthetic solutions were experimented with in an effort to obtain the desired fulfillment of a painless postoperative convalescence. The injection of novocaine in one per cent solution does not produce this result, although it produces local anesthesia at the time of the operation. Quinine-urea-hydrochloride in 3 per cent solution is tremendously painful on and after the injection, and the anesthesia lasts only a day or two. A solution of nupercaine (percaine) in 1-1000 dilution is only effective two to three hours. The analgesic solution made of anesthesin 3 per cent, benzyl alcohol 5 per cent, ether 5 per cent, and olive oil 82 per cent gives prolonged anesthesia but was discarded because the injections are extremely painful to the patient and because of objectionable taste in the mouth.

Wheeler[1] used a solution of Benacol (a mixture of five parts each of para-amino benzoylethanol-benzoate and phenmethylol in ninety parts of rectified oil) which he claimed desensitizes the operative area from three to five days. Gorsch[2] used the same solution to which he added butesin (butyl para-amino benzoate) and a basic procaine, with similar results. A solution containing anucaine, benzyl alcohol, and almond oil which works equally well has also been reported by Gorsch. Best[3] does not infiltrate the sphincter muscles with a local anesthetic, preferring to operate under sacral or spinal anesthesia. Postoperative pain was relieved by him in one hundred cases by introducing in the rectum and on the dressing an ointment consisting of three ounces of one and one-half per cent carbolized vaseline and one ounce of one per cent nupercainal ointment. Rosser[4] and Hertzler[5] found that Diothane (piperidinopropanediol di-phenyl urethane hydrochloride), a comparatively new anesthetic, produces an anesthesia lasting from six hours to four days. Frankfeldt[6] reported that he has obtained an anesthesia in hemorrhoidectomies for four or five days using a one per cent solution of novocaine followed by an injection of 3 cc. of nupercaine in oil solution into the sphincter muscles.

The most satisfactory local anesthetic in hemorrhoidectomies seems to be nupercaine in oil. The formula is as follows: Nupercaine "Ciba" base 0.5 per cent, phenol 1 per cent, benzyl alcohol 10 per cent, and oil of sweet almond. This solution was made up at the suggestion of Gabriel[7] for the treatment of fissure-in-ano. It has been used by Simmons[8] for pruritus ani. This anesthetic produces prolonged anesthesia of the sphincter muscles, causes only slight pain, if any, on injection, gives complete relaxation, and is not toxic in the amounts which have been used. The anesthesia lasts from seven to ten days. The prolongation of anesthesia and nontoxicity is due to the slow absorption of the oil. This solution was used in thirty hemorrhoidectomies, with no postoperative pain in twenty-six and only minimal discomfort in four cases. Contraindications to its use are local infection and eczema or possibly an idiosyncrasy to the drug, which have not been encountered in any of these cases.

The operation may be performed at the office if there is only one hemorrhoid, but it is better to hospitalize the patient on account of possible postoperative hemorrhage. The preoperative directions and technique are as follows: A soapsuds enema is given the night before the operation, 3 grains of sodium pentobarbital are given two hours before the operation and supplemented by a hypodermic of one-quarter grain of morphine sulphate and 1/200 grain of scopolamine an hour later. This allays any fear and excitement that the patient may experience.

The patient is placed in the lithotomy position as the separation of the legs automatically retracts the buttocks and gives excellent exposure. The anal region is shaved, scrubbed with soap and water, and an antiseptic applied. About 10 cc. of a one per cent solution of procaine hydrochloride is injected subcutaneously around the anal canal, and then five to ten cubic centimeters of the nupercaine solution in oil is warmed slightly and drawn up into the syringe fitted with a twenty-five gauge needle one and one-half inches in length. Three to five centimeters of this solution are injected at the posterior commissure into the posterior and posterior lateral fibers of the external sphincter muscles. The same amount is used anteriorly into the anterior and anterior lateral fibers. Anesthesia is obtained almost immediately and the operation may be begun as there is complete relaxation of the sphincter muscles. The anal skin is now retracted on either side with Allis forceps and the internal hemorrhoids are pulled out of the rectum to be grasped by Pennington forceps. The following is the technique employed: the hemorrhoids and hemorrhoidal feeding veins are dissected from their attach-

ments for one-half inch or more depending on the size of the hemorrhoids. Great care should be exercised to prevent injury to the sphincter muscles. Chromic catgut No. 1 or woven silk is placed beneath the pedicle, and the entire pile with relaxed mucosa is drawn down and outwards as far as possible. It is then ligated and excised. Enough stump is left to prevent slipping of the ligature. Skin tabs and external hemorrhoids if present are removed at the same operation. It may be necessary to inject one-half cubic centimeter of the anesthetic solution under a skin tab before removal.

A pressure pad is applied to the anus and the patient in a very comfortable state is returned to his room. Liquid diet is prescribed exclusively for two days to prevent cramps or desire to defecate.

Sitz baths are advised twice daily to promote healing. Mineral oil is given morning and night beginning with the third day postoperatively, and the patient is urged to defecate on the fourth day, or four ounces of mineral oil are instilled into the rectum followed in two hours by a soapsuds enema. The patient may be discharged from the hospital on the fifth day.

In the description of the operation it will be noted that the sphincter muscles were not manually dilated. The reasons for not dilating them are as follows: (1) Relaxation over a prolonged period of time is not obtained; (2) the tearing of the muscle fibers results in a fibrosis with possible loss of sphincter tone; (3) infection and rectal hematomas may occur due to excessive trauma.

Precautions which should be borne in mind when injecting this local anesthetic are as follows: (1) The finger should be inserted into the anal canal to guide the direction of the needle and avoid penetration of the rectal mucous membrane which might cause infection; (2) the oily solution should not be pooled as it may lead to a rather painful induration; (3) any intradermal injection may lead to a slough.

By the use of the above technique and the local anesthetic which has been described, I believe that postoperative pain can be avoided in the average individual.

SUMMARY

In thirty cases of hemorrhoidectomies prolonged anesthesia and relaxation of the sphincter muscles were produced by the use of the local anesthetic nupercaine in oil (Ciba). The convalescence following this local anesthetic is practically painless. The requirements of a good local anesthetic are reviewed briefly. A simple technique for performing a hemorrhoidectomy is described.

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AMERICAN ACADEMY OF TROPICAL MEDICINE

At the meeting of the American Academy of Tropical Medicine in St. Louis on November 20 and 21, the following officers were elected: Dr. Richard P. Strong, of the Harvard Medical School, president; Dr. Wilbur A. Sawyer, director of the International Health Board of the Rockefeller Foundation, vice-president; Dr. Ernest Carroll Faust, of the Tulane University School of Medicine, secretary; Dr. W. W. Cort, of the School of Hygiene and Public Health, the Johns Hopkins University, was reëlected treasurer. Dr. William H. Taliaferro, of the University of Chicago, and Dr. Thomas T. Mackie, of the School of Medicine of Cornell University, were elected members of the council. Initiated by the academy, the American Foundation for Tropical Medicine held its organization meeting, electing as president Dr. Isaiah Bowman, president of the John Hopkins University, and as executive secretary Dr. Earl B. McKinley, dean of the School of Medicine of the George Washington University. The foundation will be incorporated in the District of Columbia and will hold its next meeting late in January when a formal program will be adopted for 1936.—*Science.*

PUBLIC HEALTH SERVICE

HEALTH OFFICERS' MONTHLY STATEMENT OF VENEREAL DISEASES REPORTED IN NEW ENGLAND FOR OCTOBER, 1935

State	Syphilis		Gonorrhea	
	Cases Reported During Month	Monthly Case Rates per 10,000 Population	Cases Reported During Month	Monthly Case Rates per 10,000 Population
Connecticut	230	1.39	183	1.11
Maine	49	.61	40	.50
Massachusetts	511	1.18	595	1.37
New Hampshire	18	.38	20	.43
Rhode Island	107	1.52	68	.96
Vermont	22	.61	33	.91

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 22011

PRESENTATION OF CASE

First Admission. A four year old white American boy was admitted complaining of difficulty in breathing.

Since the age of two years the child had frequent spontaneous attacks of difficulty in breathing associated with wheezing respiration and cough, the character of which was not recorded. These attacks recurred every two or three weeks, each one lasting for about one or two days. There was no associated fever or emesis.

Physical examination showed a well-developed and nourished boy who appeared to be comfortable. Except for the presence of harsh breathing throughout both lungs the examination was said to be negative.

The patient was skin tested and found to be sensitive to feathers, horse dander and egg. He was discharged on the eighth day.

A month later an x-ray taken in the Out-Patient Department showed increased density of the shadows of the lung roots. The lung fields were clear. He received a series of five x-ray treatments to the chest with no symptomatic change. Persistent attempts at desensitization were made. Another x-ray taken one year after the first exhibited the same increase in hilar markings as well as a decrease of radiance at the left apex. The attacks of asthma continued to occur at frequent intervals thereafter.

Second Admission, nine years later, at the age of thirteen.

For the past few years he had been having asthmatic attacks associated with cough at intervals of two to fourteen days. There was no cyanosis. No note was made of the presence of expectoration. Each episode lasted for about two or three minutes, occurred suddenly without relation to activity, and subsided either spontaneously or after inhalation of fumes of burning powder. There were about three such spells a day during the attacks but in the interval between attacks he felt quite well. Two weeks before admission he developed malaise, chilly sensations, and fever. Thereafter he felt fairly well but continued to have an evening rise of temperature to 101° or 102°. He had no night sweats, ready fatigue or hemoptysis. There was no cough except during the attacks.

Physical examination showed a poorly developed and nourished thirteen year old boy. The larynx and sinuses were negative. There was slight scoliosis to the right in the lumbar region. The patient was pigeon-breasted and had a barrel-shaped chest. There was slight impairment of resonance at both apices anteriorly and posteriorly. A moderate number of squeaks, wheezes, and musical râles were heard in the right chest. Expiration was not markedly prolonged. The heart was negative. The blood pressure was 100/40.

The temperature was 100°, the pulse 130. The respirations were 30.

Examination of the urine was negative. The blood showed a red cell count of 4,650,000, with a hemoglobin of 80 per cent. The white cell count was 22,000, 84 per cent polymorphonuclears. There were no eosinophils. Repeated examinations of the sputum were negative for tuberculosis. The stools were negative.

X-ray examination showed considerable increase in the density and size of the abnormal area in the lung roots. The dense area was mottled and extended from the hilus well beyond the midchest bilaterally. The heart shadow was negative.

The patient had a rather croupy expiratory cough which became productive of thick mucopurulent material with subsequent treatment. The temperature exhibited daily fluctuations reaching 102° and 105° in the evening until the end of the second week, when it began to subside. Thereafter it remained between 98° and 100°. The severity of the cough and attacks of asthma lessened and he was discharged on the twenty-third day.

Third Admission, eight years later, at twenty-one years of age.

The patient had been treated at the Out-Patient Department for a year after his last discharge and then, being somewhat improved, he did not return for six years. During this interval he had infrequent attacks of asthma, but shortly before his return he began to have paroxysmal morning cough. Wheezing respiration became fairly constant but was of slight severity. He suffered from no acute attacks at this time. He was treated at the clinic for about a year with little change. There was no evident relationship to season or contact, nor had there been any previously. Two days before entry he developed a tickling sensation in his throat and on the following day had several shaking chills, after each of which he felt feverish. There was no exacerbation of his previously existing symptoms.

Physical examination showed a poorly nourished patient with slightly labored and somewhat noisy breathing. There was slight cyanosis of the acral parts. The throat was injected and there was considerable postnasal mucoid

discharge. As a result of the scoliosis previously noted there was increased prominence of the left chest posteriorly. The heart was rapid but otherwise negative. The blood pressure was 110/70. The lungs showed normal resonance. There was prolonged expiration, and at the left base posteriorly a slight exaggeration of the breath sounds. Many inspiratory and expiratory musical râles and a few scattered coarse moist râles were audible generally.

The temperature was 103°, the pulse 110. The respirations were 25.

Examination of the blood showed a white cell count of 12,000, 82 per cent polymorphonuclears, 14 lymphocytes and 4 eosinophils. The sputum consisted of mucoid material and repeated examinations for tubercle bacilli were negative. The sedimentation rate was 1.21 millimeters per minute.

X-ray examination showed that the previously observed lesion had spread to involve both upper lobes. There were some changes in the left lower lobe as well.

Following symptomatic treatment the temperature and pulse returned to normal on the fifth day and there was improvement in the patient's general condition. He was discharged on the tenth day.

Final Admission, one month later.

Following his last discharge the patient was troubled with a severe racking morning cough which lasted for about half an hour and was productive of large amounts of foamy watery material, occasionally thick and mucoid in character. There was no blood present. He felt well at the end of two weeks, but shortly thereafter he became nauseated and vomited twice. He remained in bed for ten days preceding his final admission and his cough became more frequent. His pulse became quite rapid and his temperature often rose to 103°. He felt quite weak but there were no other complaints.

Physical examination showed a sick looking young man sitting up in bed with slightly labored breathing. There was moderate cyanosis but no clubbing of the fingers. The skin was hot and moist. The throat was red and there was a marked mucopurulent postnasal discharge. Chest expansion was forced and there was bulging of the interspaces with expiration. There was dullness over the left chest at the level of the angle of the scapula. The lungs were full of asthmatic wheezes, but no fine râles were audible. The heart was very rapid and there was marked gallop rhythm best heard at the apex. There were no murmurs. The blood pressure was 120/80.

The temperature was 102.6°, the pulse 144. The respirations were 32.

Examination of the urine showed a slight trace of albumin but was otherwise negative. The blood showed a red cell count of 4,000,000, with a hemoglobin of 70 per cent. The white cell count was 23,000, 88 per cent polymorphonuclears. The sputa were mucopurulent and no tubercle bacilli were found. The nonprotein nitrogen of the blood was 27. Intracutaneous injections of 1:20,000 old tuberculin showed a negative reaction in forty-eight hours. An electrocardiogram showed a slight inversion of T_1, prominent P_2 and P_3, and a diphasic Q-R-S. There was right axis deviation.

X-ray examination of the chest showed no change from that previously described.

The temperature remained elevated and at the end of the first week it rose to 105°. The throat and tonsils remained inflamed and a slight nonfluctuant bulge appeared on the right side of the pharynx. Respirations were markedly asthmatic and the patient remained cyanotic. Increasing cyanosis was relieved temporarily by an oxygen tent, but the patient failed rapidly and died on the eighth hospital day, sixteen and a half years after the first admission.

Differential Diagnosis

Dr. Donald King: I do not know just why the x-ray treatments were given. In a child of this age with dyspnea an enlarged thymus may have been considered. I do not believe that treatment was given for enlarged hilum glands. I am inclined to assume that at the time of this patient's first admission x-ray treatment was being tried out as a form of treatment of asthma.

At the time of the second admission it is of interest to note that the record says that the musical râles were limited to the right side. It is conceivable that there was at this time localized pressure on the right bronchus from an enlarged gland, but I am assuming that this was a case of bronchial asthma with a bilateral and not a "unilateral wheeze".

At the first admission skin tests were found to be positive, but we are led to believe that these tests did not help in treatment.

The history then is that of a boy who was followed from the age of four to his death at the age of twenty-one. He first came in with what seems to be typical bronchial asthma of two years' duration. There is no evidence of enlarged thymus or inhaled foreign body or enlarged glands pressing on the bronchi. Skin tests showed the patient to be allergic.

He comes back to the hospital at the age of thirteen. He had had fairly severe asthma during the interim and now has a definite barrel chest and pigeon breast deformity. He is brought in because of an acute respiratory infection, with fever, purulent sputum, and an increased white count with a high percentage of polymorphonuclears. Eight years later at the age of twenty-one he comes back again. During six of these eight years he has been comparatively free from asthma. He now returns with an acute infection of the upper respiratory tract as shown by the redness of the throat and the marked postnasal discharge. There were chills at the onset, and without much question there was also infection in the

lower respiratory tract. The white cell count was 23,000. Following this he was discharged and came back in a month with another acute respiratory infection. The temperature is markedly elevated. There is cyanosis and a red throat. The cyanosis increased definitely, the temperature rose to 105°, and he died a few days after he was admitted for the fourth time.

This is the history then of a severe case of bronchial asthma that went on between the ages of two and twenty-one, and was accompanied by spells of acute upper respiratory infection as well as bronchial or bronchopneumonic infection.

In the laboratory there were repeated attempts to prove a diagnosis of pulmonary tuberculosis. Many specimens of sputum were examined for tubercle bacilli but none were found. A tuberculin test with a 1:20,000 dilution was negative. One might wish that the sputum had been examined by special concentration methods, but with as much sputum as was present in this case the chances are overwhelmingly in favor of the usual method of examination being positive if tuberculosis were present. From the laboratory standpoint we can consider tuberculosis to be ruled out.

The most interesting part of the history is the description of the x-ray films. The only films available for examination at the present time are the ones taken on his third and fourth admissions. From the description in the history at the age of four years the film showed definite bilateral changes at the hilum. At the age of five years the hilar shadows had increased and the left apex was also somewhat involved. At the age of thirteen years the process had spread out from the hilum beyond the midlung field. At the age of twenty-one both upper lobes were involved and there was also an area of increased density in the left lower lobe. Let us look at the x-rays. I shall give you my interpretation and then let the x-ray department tell you what is wrong with this interpretation. The film taken on the third admission shows definite changes through the upper part of both lungs with pathology also at the left base. This other film is a portable taken at the last admission, four weeks later.

DR. AUBREY O. HAMPTON: That was taken two months later.

DR. KING: Is it a portable?

DR. HAMPTON: Yes.

DR. KING: If one had to make a decision from this film alone, I believe that the diagnosis of pulmonary tuberculosis would be justified, although the picture is not quite typical of this disease. At the left base I believe there are changes characteristic of bronchiectasis. Can all or most of these changes be due to tuberculosis persisting for seventeen years? Personally, I do not believe so. The x-ray changes seem to me consistent with what we might expect in a very severe asthmatic, and I shall be much interested to see whether this is true. Dr. Hampton has been much interested in this problem of nontuberculous pulmonary fibrosis, and will, I know, discuss this problem for you.

May I show a few other cases, all of whom had asthma with definite x-ray changes and postmortem examinations. The first case is that of a woman of forty-five. Her asthma began at the age of twelve, but she had no severe symptoms until a year before her death. The x-ray changes are much like those seen in the case under discussion today. Autopsy showed extensive pleuritis, marked nontuberculous pulmonary fibrosis and emphysema. There was no histological evidence of tuberculosis.

The next case had asthma starting at the age of thirteen and continuing until her death at the age of fifty-five. At the last admission her symptoms were largely cardiac. Autopsy showed extensive sclerosis of the pulmonary vessels with marked thickening of the intima. There was also marked nontuberculous pulmonary fibrosis. The heart was very large and was definitely a cor pulmonale. There was a very large liver and massive edema of the extremities. In the oblique film many large emphysematous blebs are shown. It is interesting to speculate as to whether the boy in today's discussion would have developed these blebs and definite blood vessel changes if he had lived longer. There is no x-ray evidence of emphysematous blebs in his lungs at the time of his death.

The next case is a man of fifty-five whose asthma began at the age of thirteen. At the time of examination the x-ray showed marked fibrosis, and the question was raised as to the diagnosis of tuberculosis. The ordinary sputum examination showed no tubercle bacilli and special concentration methods failed to reveal their presence. Finally, however, the sputum was injected into a guinea pig and tubercle bacilli were found. Since this time there has been a definite increase in the pulmonary process and the x-ray now shows a large tuberculous cavity at the left apex. This then is a case of pulmonary fibrosis which is probably on a tuberculous rather than an asthmatic basis. No autopsy has been performed.

The final case is one of nontuberculous fibrosis and there was no history of asthma. As you will see, the film shows marked fibrosis in the upper lobes and the autopsy report was extensive bronchiectasis with nontuberculous pulmonary fibrosis.

Returning now to the patient whom we were considering I will ask Dr. Hampton to demonstrate the x-ray changes.

DR. HAMPTON: The first thing that occurred to me after viewing these films was that the epiphyses had not closed. He is twenty-one. He must have been a cretin. He also had a very queer back. I do not understand it at all. It looks as though he should have had some type of arthritis but I see no mention of that. His joint spaces in all the dorsal vertebrae were

markedly narrowed and coming down to the lumbar area he shows the same thing. That may be congenital, just as the failure of closure of the epiphyses of the vertebrae may be due to congenital defect.

I would follow Dr. King's reasoning exactly. If I had just this film I would say tuberculosis and bronchiectasis. If I had fluoroscoped him I should probably also add that he had emphysema; that is, if I saw the typical diaphragmatic excursion of emphysema, or asthma, and then I would say he had an enlarged heart.

The scoliosis here prevents one from interpreting the exact shape of the heart, but certainly the right border is prominent; so I might assume that the right side was enlarged. The cardiac change is more obvious in a later film. This film looks as if it were taken back down and the heart is magnified, but the right curve is definitely more prominent than it should be.

DR. KING: So you think it is right-sided enlargement?

DR. HAMPTON: Yes, probably.

DR. KING: If any of the cardiac men are here it would be interesting to have them speak about the electrocardiogram and state whether they think this is definitely a cor pulmonale. I think it is unusual to get a cor pulmonale without more in the lung fields. My feeling is that there will be some but not very marked right-sided cardiac hypertrophy.

DR. HAMPTON: I might add that enlargement of the right side could be due to congenital heart disease. I have no definite differential point from the study of these films.

DR. KING: You think the picture from the beginning may be congenital heart; or do you think there is bronchial asthma without congenital heart?

DR. HAMPTON: I think your previous opinion is more correct.

DR. KING: Dr. Hampton probably knows something about this case and is a little cautious. Besides the bronchial asthma and fibrosis I should say there was bronchiectasis.

DR. HAMPTON: I agree.

DR. KING: At the same time there is probably pneumonia to account for the fever and other symptoms.

Are there any other conditions we have to think about? I do not believe so. Malignancy, fungus infection, syphilis, and silicosis are thrown out. As far as we know there is no sign of thrombi, emboli or infarcts coming into the picture at the end. So that my diagnosis would be bronchial asthma. I expect that Dr. Mallory will find the changes consistent with bronchial asthma, thickening of the bronchi with narrowed lumina, and that some of the bronchi and many of the bronchioles are plugged by the definite asthmatic secretion. Then I should think there was emphysema, bronchiectasis of the left lower lobe, bronchopneumonia, probably, and perhaps some acute infection in the upper respiratory tract. I do not believe there is enough to make a diagnosis of retropharyngeal abscess, although there is mention of some bulging in the right pharynx.

DR. HAMPTON: Would you like to localize the disease a little more? Do you think it was definitely within the upper lobes?

DR. KING: Yes.

DR. HAMPTON: With emphysema in the lower lobes? The fibrosis is more localized to the upper lobe than most of our fibrosis cases have been. The right upper lobe should be very small and sclerosed with fibrous tissue and this apparent localization is the only out, as far as I can see. It is too sharply localized for those cases which we have been studying and I am wondering if Dr. Mallory will not say that the dullness represents unresolved pneumonia or fibrous organized pneumonia.

DR. KING: He has had these changes going on from four years old.

DR. FRANCIS M. RACKEMANN: This x-ray picture is not typical of the ordinary asthmatic. I should say that there was some local process going on in the upper lobes to account for the fibrosis. The history suggests to me one of repeated respiratory infection and I should suppose that Dr. Mallory would find (I agree with Dr. Hampton) more or less bronchopneumonia in these upper areas. Furthermore, I do not believe Dr. Mallory will find much plugging of the bronchi. The boy was pretty sick and I think his death was from pneumonia rather than asthma.

To change the subject a little, this boy was rather a pet of the clinic. My impression is that when he came to the clinic as a young boy, he had a marked deformity of his chest and a deformity in the spine as well. He was always cyanotic, always had a wet nose, and was always a little short of breath. So far as his asthma goes, he has behaved fairly typically. He had positive skin tests and in the hospital he was relieved promptly so that he could be discharged in eight days. He responded well to changes in his environment. The interesting point is that at twenty-one his asthma was much improved and that is more or less the rule with people who begin to have asthma early. They outgrow it.

CLINICAL DIAGNOSES

Asthma.
Emphysema.
Secondary polycythemia.
Cor pulmonale.

DR. DONALD KING'S DIAGNOSES

Bronchial asthma.
Bronchiectasis.
Bronchopneumonia.

ANATOMIC DIAGNOSES

Emphysema, focal.
Bronchiectasis.
Pulmonary fibrosis.
Bronchopneumonia.

Cor pulmonale.
Chronic passive congestion of the liver, kidneys and spleen.
Pleuritis, chronic fibrous, bilateral.
Pleuritis, acute fibrinous, left.
Scoliosis, left dorsal.

Pathologic Discussion

Dr. Tracy B. Mallory: I think it would be easier for the clinician, the roentgenologist and the pathologist to get together on these cases if we could define the disease that we are dealing with a little better. I question if what Dr. King calls asthma is exactly what I call asthma, and I feel quite sure that what the clinicians call emphysema is not what I call emphysema. There are two sides to bronchial asthma; one is the occurrence of episodes of spasmodic dyspnea, a dyspnea moreover which is specifically characterized by a prolongation of expiration. Any patient subject to fairly frequent attacks of this type must unquestionably be regarded as an asthmatic. But such attacks are physiological in character, may be accompanied by no impairment of function in the intervening intervals, and do not in themselves produce any permanent morphologic changes. A second phase of "asthma" as the term is vernacularly used must be recognized, however. A limited number of asthmatics show persistent, apparently irreversible functional impairment. In many instances this can be shown to be due to anatomical processes such as emphysema and pulmonary fibrosis, but, since indistinguishable lesions occur frequently in nonasthmatics as well, it seems to me that they should be regarded as complications of asthma rather than as integral parts of the disease. That the asthmatic state may predispose to their development would be rash to deny and is in fact probable although reliable statistical evidence is not yet at hand.

My interpretation of this case is that this boy had these complications and developed the secondary changes in the lung. His lungs showed very numerous scattered patches of marked fibrosis. Within most of these fibrotic areas are dilated bronchioles and small bronchi, and there is very widespread bronchiectasis throughout practically all five lobes. The fibrosis was most marked in the right upper and middle lobe. The bronchiectasis was perhaps most marked in the left lower, although it was present in the upper lobes as well.

He had an extreme grade of anatomical emphysema; that is, not merely mechanical physiological dilatation of the alveoli, as you see it in the midst of an asthmatic paroxysm, but destruction of alveolar walls and fusion of alveoli into large sacs and blebs. On the right side one bleb measured six centimeters in diameter and in numerous other places there were alveolar sacs from one to 2.5 centimeters in width. The bronchi showed no thickening of the muscle layer and no mucoid secretion. There was an acute purulent bronchiectasis, with extension into small groups of alveoli and beginning bronchopneumonia.

The heart is one of the severest cor pulmonales that we have seen, with a right ventricle that was within a millimeter as thick as the left.

The remainder of the autopsy was essentially negative. We unfortunately did not examine the thyroid. I wish I had known Dr. Hampton's findings in the epiphyses at the time of the autopsy.

I will show you a lantern slide from this lung. This represents one of the bronchi. The mucous membrane, you will notice, shows marked polypoid projections which are interspaced with hernia-like outpocketings of the mucous membrane halfway through the wall. The musculature, which you can see there and there, is well within normal limits or often slightly less thick than normal. The lumen contains a secretion but it is not the thick mucoid secretion of the asthmatic paroxysm, but a thin purulent one which is simply the evidence of an acute terminal bronchitis. The alveoli in this area tend to average a little bit over normal in size but there are focal areas where there are larger alveoli running up to three or four times the normal. That is particularly marked at this point and you will notice that in the center of that area is a little fibrous scar, also another to the right of it. In other words, exactly in that area there has been considerable destruction of lung tissue and the immediately adjacent alveoli have dilated to fill the space and in that way produced a localized focus of emphysema.

This second slide shows a more extensive area of scarring in which all the alveoli have been completely destroyed, and in this case the small bronchi have dilated, as the alveoli did in the other section, and are forming definite bronchiectatic cavities. At this point there is a focus of terminal acute pneumonia.

How are we to interpret the pathogenesis of this case? The effort must admittedly be guesswork but I believe we can trace the course with fair probability. As Dr. Rackemann, who had the advantage of following this case in life, pointed out, his asthma in the sense of the frequency and severity of his paroxysms was not excessively severe and in the latter years of his life was actually improving. On the other hand, he did have repeated attacks of real pulmonary infection, presumably pneumonia. I would tie these with the multiple scars found at autopsy and assume that, in one or perhaps each pneumonic attack, organization rather than resolution had occurred. The resulting scars contracted and the surrounding uninvolved pulmonary tissue, alveolar in some instances, bronchiolar in others, dilated under the influence of the negative thoracic pressure to fill the space. Asthma paroxysms, if persistent, would increase the need of such dilatation by maintaining the thorax in a dilated inspiratory position but would not initiate the process. Something in

the allergic state may also predispose to organization rather than resolution.

DR. HAMPTON: Do you make any differentiation of the bronchiectasis at the left base and that within the upper lobes? Is there any difference in the character of the bronchial disease? For instance, do you not show dilatation of the bronchi due to fibrosis just as you showed ruptured alveoli due to fibrosis? Is this bronchiectasis an indication of the fibrosis?

DR. MALLORY: I think that is one of the not infrequent backgrounds of bronchiectasis.

DR. HAMPTON: It is the cause of bronchiectasis?

DR. MALLORY: It is one of the causes, not the only one; but I feel sure it is one cause.

DR. HAMPTON: We would have seen the blebs if lateral and oblique views had been taken. Examination of this type of patient is not complete until these views have been taken.

CASE 22012

PRESENTATION OF CASE

Eight months before entry the patient, a thirty-one year old American housewife, gradually developed frontal headaches, occurring at first at infrequent intervals, usually in the morning, and becoming more frequent and more severe. At about the same time she noted a diminution in vision, at first transient but for the past six months permanent. She had some difficulty in reading, but could read fine print for a short time. She noticed that she could not see so well out at the side of her eyes. Her headaches continued and for the past three months were constant, being present both day and night. During the past two months she had some nausea and vomiting. She developed weakness and for three weeks before admission remained in bed because of her headaches.

Her family and marital histories are noncontributory.

Two years before entry her menses, which had been perfectly regular and normal, stopped. Since then she had occasional hot flashes. There were no other menopausal symptoms.

Physical examination showed a well-developed and nourished woman complaining of frontal headache. Her chest and abdomen were negative.

Neurological examination showed a bitemporal hemianopsia. There was no disturbance in smell. Reflexes were active on both sides and perhaps slightly more so on the right.

The temperature was 98°, the pulse 78. The respirations were 20.

Laboratory examination of the urine was negative. Examination of the blood showed a red cell count of 4,000,000 with a hemoglobin of 60 per cent. The white cell count was 8200, with 68 per cent polymorphonuclears. A Hinton test was negative. A lumbar puncture showed an initial pressure of 340 which went down to 200 after 10 centimeters were removed. The fluid showed 4 lymphocytes, positive alcohol and ammonium sulphate tests, a total protein of 103 milligrams, and 56.7 milligrams of sugar. The gold sol was 0011233310.

On the third day while being examined she had a sinking spell during which she became unconscious. It was later found that she had had these attacks before. On the fourth day a right transfrontal craniotomy was performed.

Her condition on the day following operation was quite precarious. She had sugar in her urine which was controlled by insulin. She received constant intravenous 5 per cent glucose. Her temperature rose to 104°.

Lumbar punctures performed on the fourth and sixth postoperative days revealed grossly bloody fluid. The pressure reached as high as 550. She rapidly failed and died on the sixth postoperative day.

DIFFERENTIAL DIAGNOSIS

DR. EDWIN M. COLE: The history is of a young woman who began having headaches which became ever more frequent and severe and eventually were associated with vomiting. Such a story is consistent with gradually developing increased intracranial pressure. At the time that the headaches started she noted a diminution of vision. This symptom often, or one might say regularly, follows increased intracranial pressure of long standing where there has been papilledema for a long time, and a consequent secondary optic atrophy. In this case, however, the visual disturbance seems to have started almost as soon as the increase in intracranial pressure, suggesting a direct or primary interference with the visual mechanism, rather than one secondary to pressure of long standing. Moreover, according to the history, the patient noticed that she particularly found it hard to see out to the side, which suggests a bitemporal hemianopsia. This suggestion is borne out by such a finding in the neurological examination. We know that a lesion causing bitemporal hemianopsia must be at or near the optic chiasm.

In considering visual disturbances we must always think of syphilis as an etiological agent. The history of gradually failing vision is not infrequently met with in central nervous system syphilis. It is occasionally associated with increased intracranial pressure, as in rather acute syphilitic meningitis. In such cases, however, there is usually a rather widespread cranial nerve involvement which is notably lacking here, and the visual field changes are those of concentric constriction of the fields rather than a bitemporal hemianopsia. Moreover, the spinal fluid of syphilitic meningitis has a high cellular content and a positive Wassermann reaction, which is not true in this case. Therefore, I do not think that syphilis need be seriously considered.

Of course, the most common cause of bitem-

poral hemianopsia is enlargement of the pituitary itself, as in tumors of the pituitary gland, or the much rarer tumor arising from the sella turcica. Such patients often complain of visual failure, though occasionally a bitemporal hemianopsia of fairly long standing is overlooked by patients. In addition, they often have considerable headache. They do not have, however, an increase in intracranial pressure, except in those rare cases of rather long standing in which the tumor extends upward into the third ventricle. Thus, from the usual pituitary tumor, we would not expect the increased intracranial pressure and vomiting which are important features of this case. The x-ray findings in pituitary tumors are typical in showing definite distortion of the sella turcica. In this case the x-rays are said to be somewhat suggestive of some enlargement of the sella, but apparently there has been no destruction of bone, no erosion of the floor of the sella, or of the clinoids. Moreover, the presence of increased intracranial pressure suggests that the pituitary is not primarily at fault. I should feel, then, that a tumor of the pituitary gland or sella turcica is unlikely in this case.

We still must explain, then, bitemporal hemianopsia associated with a lesion causing increased intracranial pressure, which is not inflammatory. A neoplasm involving the stalk of the pituitary, thus pressing on the optic chiasm and also extending upward into the third ventricle so as to block the escape of spinal fluid from the third or either of the lateral ventricles, would, it seems to me, best account for the picture we have here.

A few other findings may throw light on this case. The increase in total protein in the spinal fluid is consistent with neoplasm. An interesting finding is the glandular disturbance, suggested by the cessation of the patient's menses, and possibly by the glycosuria before death. These may be sequelae of involvement of the hypothalamus, thus reënforcing our feeling that the lesion may spring from the floor of the third ventricle. Finally, we learn that the patient had had periods of unconsciousness during her illness, and though such are met with in many cases of brain tumor, they are very frequently associated with tumors of the third ventricle.

In this region cystic tumors, possibly springing from embryonal rests, as Rathke pouch tumors, are fairly common. This may be such a one.

Clinical Diagnosis

Brain tumor.

Dr. Edwin M. Cole's Diagnosis

Cystic tumor of the floor of the third ventricle.

Anatomic Diagnoses

Pituitary adenoma.
Operative wound: Craniotomy.
Hydrothorax, bilateral.
Bronchopneumonia.
Pulmonary atelectasis.
Pulmonary congestion.
Cholelithiasis.
Follicular cysts of the ovary, multiple.
Cystitis, acute.

Pathologic Discussion

Dr. Charles S. Kubik: The tumor in this case was a large encapsulated one 4 by 4 by 3 centimeters. It extended upward from the sella between the subthalamic structures of the two hemispheres, spreading them apart and obliterating the third ventricle. Its upper portion covered the foramina of Monro. The lateral ventricles were enlarged to about twice the normal size. This enlargement was obviously the result of almost complete obstruction to the flow of cerebrospinal fluid between lateral ventricles and aqueduct. The findings explain the elevation of intracranial pressure, which, as Dr. Cole has remarked, is not often observed with tumors in this region. It occurs only when the tumor is unusually large and may fail to occur with tumors not very much smaller than this one.

The optic chiasm, anterior to the tumor, was very badly damaged and I should suspect that all the decussating fibers were destroyed. The sella was enlarged and the floor destroyed so that nothing but the dura separated the tumor from the sphenoid sinus. These changes in the sella were so marked that it is most surprising that the x-ray plates of the skull were not more definite. Without definite x-ray evidence Dr. Cole naturally came to the conclusion that the affair was probably a suprasellar cyst, a tumor which usually does not produce enlargement of the sella.

Microscopic examination revealed pituitary adenoma.

Dr. Tracy B. Mallory: Very little of importance was found outside the head. There was marked pulmonary congestion and edema with a slight bilateral hydrothorax. A terminal bronchopneumonia was just beginning to be evident. The gallbladder contained a stone and there was an acute hemorrhagic cystitis of the urinary bladder. The ovaries were examined with some care and showed very numerous follicular cysts, many primordial follicles and several follicles in various stages of ripening. No corpora lutea were found. The endometrium appeared to be in the resting phase, showing neither proliferation nor secretion.

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WHAT SCHOOLS SHOULD BE APPROVED?

IN the Division of Civil Service and Registration at the State House in Massachusetts there are eleven licensing groups, the activities of whose licentiates extend from massage of the scalp to chiropody, with intermediate fields more or less comprehensively included, overflowing into pharmacy, veterinary medicine, embalming and certified accounting.

Competence in some of these fields is tested by examination only, as in pharmacy, veterinary medicine and accounting. Admission to examination for licensure to practice in the other fields must be preceded by attendance at an educational institution, a "school", which gives special preparation for the practice in that field.

It is worth while to notice the kind of school from which candidates will be accepted in each case. For chiropody, it must be a "reputable" school, but what is meant by a reputable school is not defined in the statute. For dentistry, the school must be "reputable" and the statute defines what is to be regarded as a reputable dental school; for optometry, the school must be "approved by the board"; for nursing, the school must be "approved by the board"; for embalming, the school must be "approved by the board". Even for the latest field for which a board of registration was set up in 1935, hairdressing, the school must be "approved by the board". For barbering, the school must be "properly equipped and conducted" and requires for its establishment a permit from the board which may be revoked if the board sees fit. For medicine only, the school may be conducted without any regard to the approval or disapproval of the board. Why is it that all these other groups have been able to secure from the legislature this protection for the public in the field in which they are interested, and medicine year after year asks protection for the public and cannot get it? It is the right of every physician and of every citizen to know why, and if the answer does not lie on the surface it should be dragged out into the light of day.

Is medicine the least in importance of these groups? Is the field of medicine one in which the issues are of slight significance in the welfare of the state? Other groups indeed, have to do with the health of the people, but who needs more knowledge, who requires greater skill, who has a heavier responsibility than the physician? Who, in his field, has greater power in the matter of life and death than the physician? Yet the embalmer and the hairdresser must come from schools approved by their respective boards. Not so the physician, a diploma mill will do for him.

The answer is not far to seek. In states in which there are no medical schools there has been no hesitation on the part of the legislature in giving the protection which has been sought. It is in states in which there are medical schools that there has been legislative hesitation, but except in Massachusetts the protection of the people has been paramount. Here the delay, and it is merely delay though all too long drawn out, is due to the presence in the state of medical schools which claim it is to their interest that this protection of the public should not be given. The issue is clear, this fact is known; the public must be informed as to what is at stake. It is the duty of the physicians to make clear to the legislature their desire for the protection of the people in the field in which they are practicing. It is their duty to insist on this protection.

Article XIX of the Declaration of Rights of the Constitution of the Commonwealth reads as follows: "The people have a right, in an orderly and peaceable manner, to assemble to consult upon the common good; to give instruction to their representatives, and to request of the legislative body, by way of addresses, petitions, or remonstrances, redress of the wrongs done them, and of the grievances they suffer." No one knows as do the physicians how much suffering unqualified practitioners cause. If they know, let them speak.

JAMES HENRY BREASTED

On December 2, 1935, in New York, died a man of particular importance to students of the early history of medicine—James Henry Breasted. Long regarded as an authority on the history of the ancient peoples of the Near East, particularly those of Egypt, Breasted reached a high point in his long academic life with his translation of the *Edwin Smith Surgical Papyrus*. From the viewpoint of the Egyptologist, this work threw new light on Egyptian philology and confirmed the impression, gained by scholars of the past, that the people of the Nile were empiricists. For the medical historian, Breasted's brilliant translation completely revolutionized all previous concepts of pre-Hippocratic surgery. Before the contents of the *Edwin Smith Papyrus* were disclosed, no one knew that scientific surgery existed in the IV Dynasty (2900 B.C.) or that men of that period could think clearly and rationalize their ideas in the spirit of modern times. The fine orderliness of the case-histories surprised even the learned Egyptologist, as is evinced by Breasted's remarks in his preface: ". . . I felt as if I had been peering through a newly revealed window, opening upon the once impenetrable gloom enveloping man's earliest endeavors to understand the world he lived in." Were it not for Breasted, the knowledge of our medical "Oriental Heritage" might for years have been delayed.

The translator, in dealing with an obscure language, has several courses open to him. He may give a literal rendition, translate the original idea into what he conceives to be a current meaning, or he may transliterate into correct but, nevertheless, uninspired modern colloquial English. All have their faults and Breasted, in his translation of the *Edwin Smith Surgical Papyrus*, avoided each of them. Not only did he summon technical help in regard to particular words from his friends in the medical profession, but he culled the "Ancient Records of Egypt" and made full use of the great Berlin "Wörterbuch der aegyptischen Sprache" in order to arrive at more precise meanings. In spite of this meticulousness, he retained a remarkable atmosphere of the ancients, not unlike that of the King James version of the Bible. Instead of, "If you examine anyone with a dislocation . . .", he makes the unknown Egyptian surgeon a more vivid personality: "If thou examinest a man having a dislocation. . . ." The illusion of sitting at the feet of the "Ancient Teacher" is thereby retained. Breasted did for the *Edwin Smith Surgical Papyrus* what Edward Fitzgerald did for the "Quatrains" of Omar Khayyám.

Thus is ended the career of a scholar and scientist, and, we might add, a poet. During the Middle Kingdom in Egypt, a certain noble, in enumerating his own virtues, inscribed on the walls of his tomb: "I gave bread to the hungry, beer to the thirsty, clothes to the naked." Could there not as well be inscribed on James Henry Breasted's "House of Eternity": "I gave to them the wisdom of the past."

THE ONE HUNDRED AND FIFTY-FIFTH MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY JUNE 8, 9 AND 10, 1936

For the third time in its history, the annual meeting of the Massachusetts Medical Society will be held in Springfield. This is especially gratifying because the Hampden District Medical Society with a membership of well over three hundred maintains high standards of professional and civic activities and the city is noted for its hospitality. The hospitals which represent in a definite way the standing of its physicians have over eleven hundred beds and will provide abundant material for clinics.

The hotel accommodations are ample and the local committee of arrangements together with the state society officials are developing programs of great excellence for the instruction of the doctors and the entertainment of the guests. When the 1926 meeting was held in Springfield, the Society elected for its president, for the then ensuing two years, Dr. John Mathews Birnie. His administration made a notable contribution to medical history in Massachusetts in the creation of an endowment for a home for the Society. In course of future years, this will grow under the able management of our treasurer, Dr. Charles S. Butler. The fund now amounts to about fifty thousand dollars and will be available whenever the Boston Medical Library is in a position to utilize the rooms now occupied by the Society.

Another interesting feature of the meeting in 1926 was the realization of the ambition of Dr. James S. Stone, who, in association with Dr. David Parker of Manchester, New Hampshire, devised the plan for the New England Medical Council which was worked out during this session. This organization was the constructive factor in bringing the several New England State Medical Societies into more harmonious relations. For several years meetings were held for the discussion of problems of common interest. One result was the association of New Hampshire and Vermont in the publication of the proceedings of these two state societies in The *New England Journal of Medicine*.

Springfield doctors are progressive and resourceful and may be considering the adoption of plans which will give to the parent society suggestions for other methods to increase the influence of the medical profession in this part of the country. The year 1936 will be an important period in the history of Springfield, for in May the city will celebrate the three

hundredth anniversary of its founding, and there will be at hand much of interest to visitors.

The doctors have been studying the medical history of the city. Some papers have been written and others are in preparation which when published will be noteworthy. This work has been sponsored by the Springfield Academy of Medicine.

These references to the Springfield meeting will be followed by a series of editorials, prepared by the Chairmen of the Scientific Sections, which will inform the Fellows of the character and scope of the scientific papers and discussions. These men are leaders in their several departments and their announcements warrant careful attention.

The Committee of Arrangements will give detailed accounts of the social features of the meetings.

Two addresses will be of particular interest. The Annual Oration by Dr. Reginald Fitz will cover significant phases of medical history. His reputation is a guarantee of the entertainment in store.

The Shattuck Lecture has always been an important contribution to the program. Although no announcement of the speaker has been made, the committee in charge of the selection has always provided an eminent contributor to medical literature. As soon as the committee releases this information, it will be published.

The Committee of Arrangements will publish from time to time details of what is being prepared. Read the *Journal* for this information and set aside June 8, 9, and 10 for a three days' vacation and postgraduate instruction.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

SWETT, PAUL P. M.D. University and Bellevue Hospital Medical College 1904. F.A.C.S. Attending Orthopedic Surgeon, Charlotte Hungerford Memorial Hospital, Torrington. Consulting Orthopedic Surgeon, Hartford Hospital, Hartford; Newington Home for Crippled Children, Newington; Litchfield County Hospital, Winsted; Manchester Memorial Hospital, South Manchester; Bristol Hospital, Bristol; Rockville Hospital, Rockville; Windham Community Hospital, Willimantic; Backus Memorial Hospital, Norwich. Consulting Surgeon, New Britain General Hospital, New Britain. His subject is "A Form of Sclerosing Osteomyelitis Following Fractures of the Long Bones." Page 1. Address: 4 Atwood Street, Hartford, Connecticut.

JOSLIN, ELLIOTT P. B.A., M.A., M.D. Harvard University Medical School 1895. Medical Director, George F. Baker Clinic, New England Deaconess Hospital. Address: 81 Bay State Road, Boston. Associated with him is

LOMBARD, HERBERT L. A.B., M.P.H., M.D. Bowdoin Medical School 1915. Director, Division of Adult Hygiene, Massachusetts Department of Public Health. Assistant Professor of Hygiene and Public Health, Tufts College Dental School. Address: 100 Nashua Street, Boston. Their subject is "Diabetes Epidemiology From Death Records." Page 7.

HERRICK, JAMES B. A.B., M.A., LL.D., M.D. Rush Medical College 1888. Professor of Medicine Emeritus, Rush Medical College of the University of Chicago. Consulting Physician, Presbyterian Hospital, Chicago. Formerly, Attending Physician, Presbyterian Hospital and Cook County Hospital, Chicago. His subject is "The Successful Doctor and the Human Side of Practice." Page 9. Address: Peoples Gas Building, Chicago, Illinois.

LEARY, TIMOTHY. A.M., M.D. Harvard University Medical School 1895. Medical Examiner, Suffolk County. Professor of Pathology, Tufts College Medical School. His subject is "The Death Rate from Alcoholism." Page 15. Address: 784 Massachusetts Avenue, Boston.

CHAPMAN, EARLE M. B.S., M.D. Johns Hopkins University Medical School 1929. Member of Staff, Massachusetts General and Chelsea Memorial Hospitals. Assistant in Medicine, Harvard University Medical School. His subject is "Further Experience with the Fractional 'Phthalein Test." Page 16. Address: 66 Commonwealth Avenue, Boston.

PHANEUF, LOUIS E. Phm.D., Ph.C., (Hon.) Sc.D., M.D. Tufts College Medical School 1913. F.A.C.S. Professor of Gynecology, Tufts College Medical School. Gynecologist and Obstetrician-in-Chief, Carney and Malden Hospitals. Surgeon, Department of Gynecology, New England Medical Center. Consulting Gynecologist, Beth Israel Hospital, Boston; Leonard Morse Hospital, Natick; Henrietta D. Goodall Hospital, Sanford, Maine; Noble Hospital, Westfield; and Attleboro Hospital, Attleboro. Consulting Gynecologist and Obstetrician, Fall River General Hospital, and St. Anne's Hospital, Fall River. His subject is "The Teaching of Gynecology at the New England Medical Center." Page 19. Address: 270 Commonwealth Avenue, Boston.

SIMMONS, NATHANIEL J. M.D. Tufts College Medical School 1926. Assistant Surgeon, Out-Patient Department, Beth Israel Hospital. Assistant Instructor, Tufts College Medical School. His subject is "Elimination of Postoperative Pain Following Hemorrhoidectomy." Page 20. Address: 371 Commonwealth Avenue, Boston.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY*

C. J. KICKHAM, M.D., *Chairman*
524 Commonwealth Ave., Boston, Mass.

R. S. TITUS, M.D., *Secretary*
472 Commonwealth Ave., Boston, Mass.

THE VALUE OF ROENTGENOGRAPHY IN ADVANCED STAGES OF PREGNANCY

Roentgenology has made rapid strides within recent years and has become a valuable adjunct in the diagnostic armamentarium of the obstetrician, also a therapeutic guide. The value derived is proportionate to the extent to which it is utilized and is enhanced by the coöperation of the Clinical Staff with the roentgenologist.

We may divide the problems requiring the aid of roentgenology into two groups, both particularly important in the latter stages of pregnancy.

1. *Maternal*
2. *Fetal.*

1. *Maternal*
   - A. *Pelvic*
     - Types of pelves
     - Injuries
     - Infections
     - Neoplasms involving the bones
     - Separation of the symphysis pubis
     - Measurements.
   - B. *Uterine*
     - Tumors
     - Placenta praevia
     - Hydramnios
   - C. *Urinary*
     - Pyelitis
     - Pregnancy hydronephrosis
     - Calculi
     - Congenital abnormalities and other conditions.
   - D. *Pulmonary*
     - Tuberculosis
     - Congestion
     - Nontuberculous lesions.
   - E. *Cardiovascular*
     - Decompensation
     - Valvular lesions
     - Congenital anomalies.
   - F. *False pregnancies.*

*A series of short selected articles by members of the Section is being published weekly.
Comments and questions by subscribers are solicited and will be discussed by members of the Section.

The roentgenographic study of the pelvis reveals the type of pelvis with which we are dealing. Caldwell and Molloy classify the pelves on a morphological basis into the four following groups

1. Gynecoid
2. Anthropoid
3. Android
4. Platypelloid

They believe that all of these types bear a definite relation to the engagement of the fetal head and have a resultant effect on labor.

Deformities resulting from congenital abnormalities or metabolic diseases such as rickets, osteomalacia and hyperparathyroidism (osteitis fibrosa cystica) are easily recognizable.

Posttraumatic changes in the pelvis and the results of inflammation and neoplastic changes are encountered. Among these may be mentioned old fractures, healed and active tuberculosis, especially of the hip joint, osteomyelitis of any of the pelvic bones, primary or metastatic neoplasms.

The demonstration of the separation of symphysis pubis or of abnormal mobility of the pubic bones is of great value to the obstetrician.

Roentgenographic methods of measuring the female pelvis are well recognized procedures and have proved more accurate than the external measurements. These methods are of two types; (1) linear, which is at present the one most commonly used, and (2) the volumetric method advocated by Dr. R. P. Ball.

From my observations the roentgenologist by stereoscopic study can usually determine the relation and proportion of the fetal head to the pelvis without the aid of direct measurements.

Uterine tumors and ovarian cysts are often demonstrated but with greater difficulty than in nonpregnant individuals, because the use of opaque media is restricted during pregnancy.

Several methods are employed to determine the presence of placenta praevia. This condition can occasionally be demonstrated in the plain film by the presence of a semilunar area of increased density in the lower portion of the uterus. The injection of a small amount of sodium or strontium iodide (two and a half per cent) in the bladder will reveal a distinct displacement of the fetal head away from the bladder due to the interposition of the placental mass. This is a very helpful and harmless procedure.

Amniography: The injection of strontium iodide into the amniotic fluid advocated by Menees, Müller and Holly is regarded as a dangerous procedure, although it beautifully outlines the placenta. By this method the sex of the fetus can sometimes be determined.

Hydramnios is characterized roentgenographically by the disproportionate enlargement of the uterus compared with the size of the fetus.

Intravenous urography has simplified and

expanded the study of the physiological changes of the urinary tract during pregnancy. These are enlargement of the kidneys, dilatation of the renal pelvis and calices, more common on the right side, dilatation, kinks, outward displacement of the middle third of the ureters and pressure on the bladder. From these physiological changes various pathological conditions may result.

Pyelitis is a common complication of pregnancy. Although this condition cannot be readily recognized on the roentgenogram, frequently a diagnosis can be made from the characteristic fuzziness in the outlines of the calices and pelvis. It is important to note the normal involution of the urinary tract which takes place promptly after delivery.

Congenital anomalies, the presence of calculi, tuberculosis and tumors of the urinary tract merit the same consideration as in the nonpregnant individual.

Pregnancy has a deleterious effect on pulmonary tuberculosis and roentgenology undoubtedly is the most reliable method we have in following the progress of the infection. The same applies to nontuberculous lesions as well, such as bronchiectasis, lung abscess, etc. One should not misinterpret the physiological increase in the pulmonary markings during pregnancy.

Changes in the cardiac measurements whether resulting from progressive failure or improvement following cardiac therapy are noted. The effect of the elevated diaphragm on the contour of the heart is still a disputed question.

Occasionally anxious women present themselves with all the signs of an advanced pregnancy. A simple radiographic examination will indicate that the pregnancy was falsely suspected.

2. *Fetal*

With the progress of pregnancy to the latter stages, the fetus itself presents a group of problems.

A. Single and multiple pregnancies
B. True position and presentation of fetus
C. Disproportion of the head
D. Malformations and maldevelopments
E. Size of fetus and its relation to viability
F. Intrauterine death of fetus.

Roentgenographically it is simple to differentiate the various positions. Prior to the engagement of the presenting part the position of the fetus may change at any time. We have observed a fetus change position five to six times within one hour during a pyelographic examination.

Stereoscopic examination assists in further visualizing the position of the presenting structures as they engage in the pelvis. Thus the head may be seen engaged in any one of the oblique diameters, anterior or posterior position. The same applies to the various other presentations. The only time the fetal head is permanently engaged is during active labor.

Malformations of the fetal skeleton are sometimes demonstrated in utero.

Monstrosities are easily discernible; the most common, anencephalon, is characterized by the absence of the normal contour of the head which is small and deformed with a rudimentary cervical and shortened thoracic spine.

In hydrocephalus the head is very large, the cranial bones are thin, the sutures considerably widened, and the fontanelles indistinct.

In breech presentations where the head lies in the fundus it may appear abnormally large. This apparent enlargement is a photographic illusion because the head in the abdomen lies at a greater distance from the film, as compared with the head lying in the pelvis. This may simulate hydrocephalus which can easily be ruled out, however, by observing the sutures which are not widened and the presence of clearly outlined fontanelles.

As previously pointed out, stereoscopic studies and measurements are of considerable value in deciding the question of disproportion in which the obstetrician is vitally interested.

Death of the fetus. Fetal death is indicated by the overlapping of the cranial bones ("Spaulding's Sign"); the head is small and the vertex is pointed. These changes are due to intrauterine cranial postmortem changes, which can be demonstrated roentgenographically twenty-four to seventy-two hours after the death of a fetus.

When the fetus is macerated the small parts are disorganized, the fetus appears to be in a crouched position, and the spine shortened. When looking for "Spaulding's Sign" one must be certain that the patient is not in labor as the uterine contractions will produce overlapping of the bones during moulding of the head.

The size of the fetus and pari passu, its viability can be established by measuring the fronto-occipital diameter as was recently emphasized in an excellent contribution by Stewart Clifford. He has pointed out that if this diameter was between eight and nine centimeters the baby was found to weigh less than three pounds. An occipital frontal diameter of less than ten centimeters indicates that the weight of the baby is less than four pounds; occipital frontal diameter 10.5, the minimum weight is four pounds; with a diameter greater than eleven centimeters the minimum weight is five pounds.

His experience further shows that the mortality for infants of less than five pounds was between 29 and 48 per cent. The mortality for infants weighing from five to six pounds was less than 3 per cent.

Since the fetal mortality is thus co-related with fetal weight, we have a valuable criterion

in determining the probable viability of the fetus when the question of interruption of pregnancy arises. Recent studies have indicated that the normal fetus gains weight in utero at the rate of five to six ounces per week during the seventh and eighth lunar months and eight to twelve ounces per week in the last two months of pregnancy. In view of this accelerated gain in weight during the last trimester, any delay in the interruption of pregnancy deliberately occasioned without adding to the maternal danger will tend to insure viability.

In addition, prematurely induced termination of pregnancy in appropriate cases when the viability of the fetus is anticipated, may be a definite factor in reducing maternal morbidity and may even avoid mortality.

The indications for the interruption of pregnancy such as toxemias, cardiac decompensation, uterine bleeding, active pulmonary lesion, urinary tract infections, etc., are well known.

Thus cephalography and cephalometry play important rôles in aiding the obstetrician in the conduct of labor with due consideration to the fetus as well as the mother.

The question of danger associated with the use of roentgenography during pregnancy is often raised. If due precautions are taken against excessive exposure no untoward effects are to be expected.

In the author's experience at the Boston Lying-In Hospital, and in his own practice, he never encountered any effect to contraindicate its use during pregnancy.

CORRESPONDENCE

THE REPORTING OF ANTERIOR POLIOMYELITIS

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

December 26, 1935.

Editor, *New England Journal of Medicine,*

During recent years much confusion has arisen regarding the actual prevalence of poliomyelitis due to the fact that no differentiation has been made in the official reports between paralytic and nonparalytic cases. The better recognition of the nonparalytic type of case and its inclusion today in the reports as contrasted with its non-inclusion in former years have given a false impression as to the prevalence of the disease as compared with these other years.

In order to avoid so far as possible further confusion, the Public Health Council has voted that effective January 1, 1936, all cases of anterior poliomyelitis shall be reported as "paralytic" or "nonparalytic (preparalytic)" cases. This means that all reports of infections to the boards of health should be made under one or the other of these classifications, and that if a nonparalytic or preparalytic case subsequently develops a paralysis a supplemental report should be made to the board of health in order to change the classification.

May I through your columns request the hearty coöperation of the medical profession in making such a classification of their reports in order that a more nearly accurate picture of the current prevalence of the disease may be available in the future.

Very truly yours,

HENRY D. CHADWICK, M.D.,
Commissioner of Public Health.

ELECTRO-CHOLECYSTECTOMY

December 18, 1935.

Editor, *New England Journal of Medicine,*

In this *Journal*, October, 1930[1], and again in September[2] and October[3], 1935, were published descriptions of an operation which I have termed "electrosurgical cholecystectomy". Briefly: The gallbladder is split to the cystic duct, which is tied, if this can be done safely; the redundant portions are trimmed away with the electrosurgical cutting current, and the remainder treated by fulguration or light contact coagulation with the biterminal coagulating current. Drainage is used. This is a modification of a procedure devised by Pribram[4] which he termed "*mukoklase*": The gallbladder is split to the cystic duct which is tied and cut, and the whole mucosa treated with the actual cautery (hot iron); the leaves of the vesicle are then sewed together, and the abdominal wound closed without drainage. It has occurred to me that, instead of the term "*electrosurgical cholecystectomy*", a simplified compound word, descriptive of the process, would be preferable. I suggest *electro-cholecystectomy.*

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1. Whitaker, L. R.: Surgical management of gallbladder disease. New Eng. J. Med. **203:** 718 (Oct. 9) 1930.
2. Idem: Electrosurgical cholecystectomy. I. Experimental observations. New Eng. J. Med. **213:** 596 (Sept. 26) 1935.
3. Idem: Electrosurgical cholecystectomy. II. Clinical application. New Eng. J. Med. **213:** 674 (Oct. 3) 1935.
4. Pribram, B. O.: Mukoklase und drainagelose Gallenchirurgie. Zentralbl. f. Chir. **55:** 773 (March 31) 1928.

LESTER R. WHITAKER, M.D.
41 Bay State Road, Boston.

DISCUSSION ON THE ANNUAL REGISTRATION OF PHYSICIANS

December 19, 1935.

Editor, *New England Journal of Medicine,*

It is unfortunate when a certain few take it upon themselves and prematurely discuss in the newspapers the annual registration of physicians. That topic should first be settled by the members of the medical profession as it concerns solely the licensed physicians of Massachusetts.

The subject is not new because several years ago, the writer advocated such annual registration of physicians, which article was printed in The *New England Journal of Medicine*, but no one paid any attention to what was said. Recently in the issue of December 14, 1935, the State of New York was mentioned as having benefited from such a law. Since New York is being used as an example, why

not include other legislation that has been passed in New York which certainly has benefited the medical profession, namely, (a) permitting the designation "Doctor" to be used only by physicians; (b) good Workmen's Compensation laws whereby the insurance companies don't have the upper hand but the medical society has it, (c) last but not least, the medical school is not mentioned on the certificate of registration, which is absolutely not necessary.

Also in the above-mentioned issue of The *New England Journal of Medicine* a $2.00 yearly tax was advocated although it was felt that some physicians might object to it. If money raised by such a law should be used for the appointment of "Inspectors" who should be registered physicians in Massachusetts, and such appointments should be made only after passing a competitive Civil Service Examination, and whose duty should be that of checking up on all persons who are practicing medicine illegally such as is now being done by pharmacists, chiropodists, chiropractors, optometrists and many others, then the registered physicians would be glad to pay such a tax.

In addition, the money so collected should also be used to acquaint the public with the use and meaning of the designation "Doctor" and also with the significance of those big signs, "Foot Specialist," "Podiatrist," etc. It is time something was done to eliminate these misleading terms. Passage of another law limiting the use of the term "Doctor" to registered physicians only and passage of better Workmen's Compensation laws are more important than the annual registration of physicians.

Should the General Court or medical profession object to a $2.00 annual tax, then the extra expense could be met by increasing the fee for those taking the licensing examinations and those seeking reciprocity.

Very truly yours,
BERNARD ZUCKERMAN, M.D.

978 Blue Hill Avenue,
Dorchester, Mass.

NOTICES

WORCESTER STATE HOSPITAL, WORCESTER, MASS.

6 PSYCHIATRIC INTERNSHIPS OF 12 MONTHS TO BEGIN JULY 1, 1936

A rotating service on medical and surgical wards, male and female psychiatric wards.

Organized instruction in eleven courses.

Registration before March 1, 1936.

Examination date: March 15, 1936, at 9 A.M. at the hospital.

The hospital provides maintenance.

Graduates (unmarried men) of Class A Medical Schools who have completed an accredited internship in medicine are eligible.

Applications should be addressed to the
DIRECTOR OF CLINICAL PSYCHIATRY.

MEDICAL CLINIC AND STAFF ROUNDS AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 P.M. on Thursday, January 9, in the Amphitheatre of the Peter Bent Brigham Hospital, Dr. Henry A. Christian, Physician-in-Chief, Hersey Professor of the Theory and Practice of Physic in the Harvard Medical School, will give a medical clinic. To it are cordially invited practitioners and medical students.

On Saturdays in the wards of the Peter Bent Brigham Hospital, from 10 to 12, staff rounds will be conducted by Dr. Christian.

REPORTS AND NOTICES OF MEETINGS

FAULKNER HOSPITAL CLINICAL MEETING

The December clinical meeting was held at the Faulkner Hospital on Thursday afternoon, December 5, at 5:00 P.M.

Two unusual cases that had come to autopsy were presented. The first one was a case of encephalomalacia widely scattered over the surface of the brain. Clinically the case had been obviously one of some disturbance in the central nervous system. The spinal fluid was negative. Although suspicion was aroused of a tumor of the corpus callosum, this was finally ruled out and a diffuse vascular lesion of the brain was diagnosed. It happened that the patient had a leukocyte count of 25,000 without any evidence of infection. The red blood count was 6,500,000. It was thought that possibly there might be a polycythemia with multiple thrombi in the cerebral vessels. The striking feature at autopsy was the fact that there was no vascular lesion of any sort to account for the multiple areas of softening of the brain and the etiology of the cerebral lesion still remains obscure.

The other case was apparently a simple one of bronchopneumonia which in the course of three weeks went to a fatal termination. The interesting feature in this case was the fact that during life it was suspected that he might have the epidemic disease which overran this country in 1918-1919. This suspicion was aroused because the leukocyte count was not elevated and the x-ray picture of the chest showed a bilateral bronchopneumonia starting in the hilus of both lungs. In addition at the right base, the process extended to the periphery in the x-ray picture which may have been due to a secondary invading organism or an extension of the epidemic disease. This suspicion was confirmed at autopsy by the finding of the hyaline-like membrane in the alveolar spaces of the lung which has been described by Wolbach as peculiar to this disease.

Opportunity was taken with the presentation of this case to emphasize the fact that the designation *influenza* is unfortunate in regard to this epidemic disease. The cause of the epidemic disease has never been ascertained. It is a disease which is very apt to have secondary invading organisms, such

as the influenza bacilli, the streptococcus or the pneumococcus, which produce lesions in the lungs and may cause death. These secondary invading organisms mask the lesion produced by the epidemic disease by the time the case comes to autopsy. In 1926 a case of the epidemic disease suspected by x-ray examination and confirmed at autopsy by the presence of the hyaline membrane, developed in Petersham, Massachusetts, and now this case has been discovered in Boston this autumn. Each winter, cases are spoken of by practitioners as influenzal pneumonia. Probably many of these are not the epidemic disease, but it seems likely that some of them are the epidemic disease which became so universal in 1918 and 1919.

Following the presentation of these two cases, Dr. Tracy J. Putnam gave a splendid presentation of the surgical treatment for athetosis. He showed some lantern slides and moving pictures of cases of athetosis before and after operation, and also showed a case which had been operated on at the Faulkner Hospital a few weeks before with very decided improvement.

He called attention to the fact that the disease consists of degenerative changes in certain areas in the brain. The etiology of this degeneration is not clear, but may be due to asphyxia at birth as many of the cases are congenital. On the other hand some of the cases develop in adult life which makes the etiology of these cases more obscure. The areas of the brain which degenerate send fibers down the cord in areas which have been localized, and the surgical treatment consists in cutting these fibers as high up in the cord as possible, not with the idea of curing the condition, but with the idea of interrupting the distressing muscular movements which are produced by the degenerative changes in the brain which send impulses down along these fibers. In order to eliminate as many of the abnormal muscular movements as possible, the fibers in the cord must be cut as high as is practicable in the cervical region. Torticollis is one of the distressing symptoms in some of these cases and to correct this the spinal accessory nerves are cut. This operative procedure offers great relief to many of the distressing symptoms in these exceedingly unfortunate individuals.

GREATER BOSTON MEDICAL SOCIETY

The monthly meeting of the Greater Boston Medical Society was held in the auditorium of the Beth Israel Hospital Tuesday evening, December third. Dr. Harry Linenthal, President of the society, presided. The evening was devoted to a consideration of liver function tests and the dietetic treatment of liver disease and hypercholesterolemia. Dr. Siegfried J. Thannhauser, Chief of Research at the Boston Dispensary and Associate Professor of Clinical Medicine at Tufts Medical School, was the principal speaker.

Dr. Thannhauser began his address by citing the manifold functions of the liver in anabolism and katabolism. He stressed the multiplicity of functions the organ has in relation to protein, fat, carbohydrates, cholesterol, bile, phosphatase, etc. In addition he mentioned the detoxifying function and the rôle the organ plays as an important subdivision of the reticulo-endothelial system. The first test of function discussed by the speaker was the galactose tolerance test. Forty grams of galactose are given by mouth and all but three grams of this should be absorbed and not appear in the urine in the following twenty-four hours. This test fails in many cases and is not a good one where there is early cirrhosis or circumscribed liver disease. It is a good test when there is severe general disease of the liver, and it often helps to distinguish simple catarrhal jaundice or acute yellow atrophy from obstructive jaundice. Other tests, depending on the liver's detoxifying function, were next discussed. The liver is supposed to deaminize amino-acids and there is an increase in these substances (tyrosine, leucine, etc.) in blood and urine in severe diseases of the liver. An amino-acid tolerance test has also been devised, but the liver is not the only deaminizer (the kidneys can also perform this function, and most all organs can do it to greater or lesser extent). The liver forms urea from ammonia, and is the only organ that does this, and a rise in the amount of ammonia in the blood denotes liver damage. This test for ammonia has to be done immediately on taking the blood. The Takata-Ara test (reading of a serum flocculation reaction with mercuric chloride) was next mentioned; the difficulty with this test is that it is said to be occasionally positive in nephritis as well as in cirrhosis of the liver. The cholesterol cholesterol-ester ratio (in blood serum) is an excellent test for liver function, cholesterol esters being markedly lowered in severe parenchymal liver damage, whereas in obstruction the ratio remains the same even though the total of the two is increased. Dr. Thannhauser also mentioned the bromsulphalein and other dye tests, which are essentially measures of secretory function, and added that they are not very sensitive. In summary he stressed the importance of doing several tests, with all the varied functions of the liver in view, and he believes that the galactose, ammonia in the blood, and the cholesterol cholesterol-ester ratio are the best tests.

Dr. Thannhauser pointed out that the dietetic treatment of diseases of the liver is not employed as a matter of course as in Bright's disease. It is probably advisable to give at least 70 per cent of the calories as carbohydrate, and restrict protein (even to forty grams a day) and fat. Small doses of insulin before the carbohydrate meal are of doubtful value. Marked protein limitation (especially because of the lack of urea formation by the sick liver) is necessary in acute disease and a wise preventive in chronic diseases of the liver. There is a difference between animal and vegetable protein in that the latter is better to use because no autolysis

takes place preliminary to eating, whereas in animal proteins autolysis before ingestion is the rule. Restriction of fat is also very desirable, and vegetable fats, the speaker believes, are to be used entirely; and garlic and onions, which increase bile secretion, can be used to advantage. The ideal diet thus embraces a rich content of carbohydrate plus small amounts of vegetable protein and fat. Sample diet sheets were demonstrated and passed around.

In discussing the pathogenesis of hypercholesterolemia Dr. Thannhauser demonstrated the analogy and the difference between this disease and gout; in both diseases a physiological substance of intermediary metabolism becomes a cause of morbidity because of its retention. In so-called essential xanthomatosis (demonstrated by the presence and microscopic appearance of so-called "foam cells") cholesterol is stored, destroys the cell, and finally leaves a granulomatous scar. Cases of this disease naturally improve on a cholesterol-free diet. Inasmuch as animal cholesterol is the only one absorbed as such, vegetable oils are the only ones permitted. A pure vegetable diet is not a source of absorbable sterols. Improvement takes place in four to eight weeks. Hypercholesterolemia from other causes (hyperthyroidism) may also be benefited by an animal-cholesterol-free diet.

Dr. Chester Jones, of the Massachusetts General Hospital, opened the discussion. His attitude about liver function tests is that of a conservative. Except in rare cases, liver function tests are no better than experienced clinical judgment. As far as diagnosis is concerned such tests are usually disappointing, and they frequently are found wanting in critical cases. The speaker mentioned a severe case of yellow atrophy due to arsenic where the patient had always taken care of galactose. The diagnostic value of all such tests is overrated and a plea was made for intelligent use of simple tests that are combined with clinical judgment. As far as prognosis is concerned, however, the tests are of very definite value for a repetition of them may show a trend, which is always important. A simple good practical test is recording the urinary output; if this rises spontaneously, the prognosis in acute liver disease becomes better. The risk of hemorrhage, a very important consideration if surgery is contemplated, is a hard one to evaluate. A study of coagulation time, sedimentation rate, and so-called "venous stasis bleeding time" sometimes helps. As far as treatment is concerned, Dr. Jones wishes to emphasize the value of carbohydrate. Insulin is a very doubtful adjunct. Parenteral as well as enteral administration of sugar is often necessary or at least wise. Rectal administration is of little practical value. Although fat and protein intake should be kept at a low level, in chronic long-standing disease, Dr. Jones believes many patients suffer from protein lack, because of anorexia and because of the loss of protein into the ascitic fluid if that is present. Milk and liver protein (shown by Whipple to be of value in raising serum protein) are indicated in such instances.

Dr. I. R. Jankelson wished to stress the value of icteric index and van den Bergh reactions. He has also been doing some work on the intravenous galactose tolerance test, bilirubin tests, and tyrosine-content of the blood. He pointed out the two great difficulties encountered in liver function studies, namely, the great reserve of the liver and its great recuperative power. Insulin may be of definite value, if only because it increases the appetite. Dr. Jankelson asked about insulin in hypercholesterolemia, but Dr. Thannhauser said he had had no experience with it.

Dr. Benjamin Banks cited some of his experimental work on dogs in which he showed conclusively that the liver stores more glycogen when glucose is given by vein than by other routes.

In closing, Dr. Thannhauser reëmphasized the fact that function tests are never good in themselves but are only to be considered in connection with clinical facts. Hypercholesterolemia secondary to chronic biliary cirrhosis must be distinguished from essential or primary xanthomatosis with hypercholesterolemia. Dr. Thannhauser would restrict protein more vigorously than Dr. Jones, even in chronic liver disease.

The interesting meeting was adjourned by the president shortly after ten o'clock.

CARNEY HOSPITAL CLINICAL MEETING

The last clinical meeting of the Carney Hospital was held on December 2, 1935, at 8:30 P.M. The entire meeting was given over to a symposium on back pain.

Dr. A. R. MacAusland presented the various orthopedic conditions which could be considered the etiological agent for such pain. He stressed the importance of consultations with specialists in those fields in which conditions arise which produce back pain.

Dr. W. J. Mixter presented the differential diagnosis from a neurosurgical point of view. He emphasized the use of the lumbar puncture and the lipiodol injection. He also stated that the chemistry of the spinal fluid in many cases makes the diagnosis.

Dr. R. J. Heffernan presented back pain from the gynecological aspect. He also stressed the need for consultation and said that fibroids per se do not necessarily cause pain in the back, but that the accompanying congestion of the pelvic organs is probably the main factor.

The urological point of view was presented by Dr. Roger Graves. In his opinion, kidney disease rarely gives the type of pain that was under discussion. He also brought out that congestion of the pelvic organs was certainly a factor to be considered and that such things as a full bladder and an infected and congested prostate could cause

pain in the lumbosacral region. Metastatic implantations from the prostate to the vertebrae were emphasized. A general discussion by members of the staff and visitors followed.

BOSTON PATHOLOGICAL SOCIETY

The stated meeting of the Boston Pathological Society was held in the Pathological laboratories of the Children's Hospital on Friday evening, December 6. Members and guests gathered early to have the opportunity of examining interesting specimens and microscopic sections from the pathological department of the hospital, and to allow informal study and discussion of these cases. The meeting was called to order at eight forty-five by Dr. Shields Warren.

The first talk was by Dr. Ralph Miller, of Dartmouth College Medical School, on "Secondary Nodules of Lymphatic Tissue." These nodules have been given a variety of names: central regions of lymphatic tissue, germinal centers, degeneration centers, or white centers of peripheral nodules. They are most prominent in childhood and are of commonest occurrence in areas where there is inflammation or necrosis. The various types of these nodules (active, necrotic, epithelioid, hyalin, and reticular) were discussed and depicted on lantern slides made from microscopic sections. The speaker discussed the relation of these nodules to immunization (especially so-called cellular immunity), and summarized the indirect evidence which seems to link them with this function of the body,—their location in sites of inflammation, their appearance only after contact with an external agent, and their increase in number where bacteria are most numerous. In response to a question about their vascular supply, the speaker added that, so far as he can tell, their circulation is not an open but a closed one.

Dr. Mortimer Warren of the Maine General Hospital next discussed two interesting cases of leukemia. The first was of the chronic lymphatic type, in a sixty-six year old Indian male, and the second was of an acute type in a nine months old female infant. There was considerable question concerning the latter as to whether it was an acute myeloid type or perhaps monoblastic (endothelioid type of cell) in origin. In the discussion of the cases the short duration of leukemia in children was brought out, as well as the frequent difficulty in classification of the younger groups among the patients.

Dr. Cecil Krakower of the Children's Hospital, Boston, gave the final paper on the program, a discussion of "Unusual Terminations of Leukemia in Childhood." Dr. Krakower's presentation was limited to six cases of the forty seen in the past ten years at the Children's Hospital. All six showed very striking bone marrow pictures, hypoplasia to complete aplasia of the marrow. There was noted a marked paucity of infiltration of leukemic cells in the organs at postmortem examination, apparently due to a disappearance of the cells just prior to death.

At a business meeting following the papers, Dr. Monroe J. Schlesinger was elected President, and Dr. Beach Hazard, Secretary of the Society. Refreshments were served.

THE CUTTER LECTURE IN PREVENTIVE MEDICINE

The Cutter Lecture in Preventive Medicine for 1935 was delivered December 4 at the Harvard Medical School by Dr. Milton J. Rosenau, recently retired Charles Wilder Professor of Preventive Medicine and Hygiene at the Harvard Medical School. Dr. Rosenau spoke on the subject of "Epidemics."

Epidemiology does not confine itself to infectious or contagious diseases, but is the study of disease as a mass phenomenon. Diseases affect the community of individuals much as they affect the community of cells which compose our bodies.

Dr. Rosenau told of his "discovery" of an epidemic of bubonic plague which occurred in Stratford-on-Avon in 1564. While in Stratford-on-Avon in 1914 at the celebration of the 350th anniversary of Shakespeare's birth, he examined the parish register and found the typical rise and fall of mortality that characterize an epidemic. This was but a part of the great pandemic that swept all of Europe in the sixteenth century and cost some twenty-five million lives. Such great catastrophes as this were of great import in shaping the history of the world.

The typhoid epidemics of Chicago were cited as examples of water-borne epidemics. Chicago formerly took her drinking water from Lake Michigan only a relatively short distance from the vicinity where all of the city sewage was emptied. Deaths from typhoid fever during this era were extremely numerous, averaging around one thousand each year. With the installation of the drainage canal and the disposal of the sewage into the Illinois River, there was an immediate and striking decrease in the incidence of typhoid and dysenteric disease. Soon, the city claimed complete freedom from the disease. Then in 1923 a cross connection between the water and sewer systems precipitated another epidemic of typhoid, localized in one part of the city. Diagnoses of cases irregularly scattered throughout the city were soon made. Dr. Rosenau emphasized the fact that these latter cases were not "new", but that it had become "unfashionable" to diagnose typhoid in Chicago, and the outbreak of the localized epidemic had merely served to "bring under cover cases to light".

The number of cases required to justify the designation of an epidemic is indefinite, and largely a matter of relativity. Twenty years ago rates of typhoid of 15 to 20 were called "residual" or "normal" rates in the United States. At the same time rates in Berlin and Paris were as low as 2, and a rise to 15 or 20 would have promptly been considered

as an epidemic in those cities. The definition of an epidemic is thus seen to be largely an academic matter.

A complete understanding of a disease necessitates a knowledge of its clinical aspects, its laboratory data, and its epidemiology. Epidemiology's contributions to our knowledge of a disease are exemplified by the researches of Peter Parnum in an epidemic of measles which occurred in the Faroe Islands in 1846. Previous to that date there had been no measles on these islands for a period of sixty-five years, a fact that showed there was no chronic carrier of the disease. Then a person left Copenhagen in the incubation stage of the disease, and arrived on the islands while in the infectious period, with the result that 6000 persons were involved in an epidemic. Only those persons over sixty-five years of age, and those in isolated districts escaped infection. Parnum determined by epidemiological studies that there is no inherited immunity, that one infection produces life-long immunity, that the incubation period is fourteen days, and that all ages are susceptible. (Later studies have shown that new-born babies of mothers who have had the disease are immune for a period of several months after birth, due to passage of antibodies through the placenta.) He learned that the disease is infectious in the pre-eruptive period, and that it is not communicable in the desquamative stage. Its highest fatality is in the aged and young.

Errors have been made in epidemiology as in most other sciences: Malaria was first believed to be a water-borne disease by Ronald Ross; all materials brought through the port of San Francisco were put through sterilizing processes during the bubonic plague, while rats were completely disregarded; letters coming from yellow fever districts were sterilized for years. Pettenkofer believed in marasmus as the cause of cholera, and installed a remarkable sewage disposal system in Hamburg, which failed completely to reduce the incidence of the disease. Koch applied his knowledge of the cholera vibrio to the problem, installed an adequate water system, and abolished the disease from the city. Koch also made mistakes, and although all of his work on the bacteriology of tuberculosis was correct, some of his epidemiological work was wrong.

Weber found that diphtheria first appeared in Europe in the sixteenth century at about the same time as potatoes, that its incidence increased with increasing use of potatoes, and that the rate was high in cities using many potatoes and low in cities using very few potatoes. He mistakenly concluded that the use of potatoes caused the disease in some way.

Farr's second law that disease increases with increasing density of population is now known to be false, and in reality dwellers in large cities are less smitten by disease than those in rural communities. It is true that some diseases, such, for example, as diphtheria and scarlet fever, are more prevalent in cities and may be considered as "herd diseases". On the other hand diseases such as malaria and hookworm infestation are mainly rural in distribution.

Dr. Rosenau illustrated some epidemiological methods by telling how an epidemic of hoof and mouth disease was traced to some impure vaccine virus which had been imported from Japan for use in inoculating calves in the preparation of vaccines.

Epidemics are greatly influenced by movements of the population. Because of this mobility the amebic dysentery epidemic of 1933 was spread over a three thousand mile area from its source in Chicago. This epidemic was also the first example of a waterborne epidemic of amebic dysentery, the mass infection of about 1000 cases being due to inadequate plumbing, and the existence of cross connections between the sewage and water systems.

The advent of the airplane, and the rapidity of travel between widely separated areas have raised the serious possibility of initiating widespread epidemics of hitherto comparatively local diseases.

GREATER BOSTON MEDICAL SOCIETY

The next meeting of the Greater Boston Medical Society will be held in the Auditorium of the Beth Israel Hospital, Boston, Mass., Tuesday, January 7, 1936, at 8:15 P.M.

PROGRAM

1. The Effect of Intestinal Enzymes on Insulin; Prevention of Digestion of Insulin with Alcohol. Harry Blotner, M.D.
2. Visualization of Postgonorrheal Complications. Boris Greenberg, M.D.
3. Studies in Gout. B. M. Jacobson, M.D.
4. A Method for the Prolongation of the Effect of Medication. H. L. Naterman, M.D.
5. Some Effects of Diet Restriction in Patients with Heart Disease. S. Proger, M.D.
6. The Quantitative Study of Nasal Obstruction. H. J. Sternstein, M.D.
7. The Prevention of Anemia in Pregnancy. M. B. Strauss, M.D.

Physicians and medical students are invited to attend.

H. Linenthal, M.D., *President*,
D. B. Stearns, M.D., *Secretary*.

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Shattuck Street Entrance), Tuesday evening, January 14, at 8:15 P.M.

PROGRAM

Presentation of Cases.
The Physiology of the Elephant. By Dr. Francis G. Benedict.

Medical students and physicians are cordially invited to attend.

Marshall N. Fulton, M.D., *Secretary*.

MASSACHUSETTS GENERAL HOSPITAL

A Clinical Meeting of the Staff of the Children's Medical Service will be held in the Ether Dome on Friday, January 3, at 12 noon. Dr. Tefft will preside.

WILLIAM HARVEY SOCIETY

The next meeting of the William Harvey Society will be held Friday, January 10, in the Auditorium of the Beth Israel Hospital, Boston, at 8:00 P.M.

PROGRAM

Speaker: Dr. H. Houston Merritt, Instructor in Neuropathology, Harvard Medical School.

Subject: Syphilis of the Nervous System.

Chairman: Dr. Abraham Myerson, Professor of Neurology, Tufts College Medical School.

THE EXECUTIVE BOARD OF THE CATHOLIC HOSPITAL ASSOCIATION

The Officers and Executive Board of the Catholic Hospital Association of the United States and Canada announce that the Twenty-First Annual Convention of the Association is to be held at the Fifth Regiment Armory, Baltimore, Maryland, June 15 to 19, 1936, under the patronage of His Excellency, The Most Reverend Michael J. Curley, Archbishop of Baltimore.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, JANUARY 6, 1936

Monday, January 6—

*8:15 P.M. New England Heart Association. Peter Bent Brigham Hospital.

Tuesday, January 7—

2:30 P.M. Pediatric Ward Visit. Massachusetts Eye and Ear Infirmary.

7:45 P.M. Gardner Auditorium, State House, Boston. Psychoanalysis and Mental Health. Jacob Kasanin, M.D.

*8:15 P.M. Greater Boston Medical Society. Auditorium, Beth Israel Hospital, Boston.

Wednesday, January 8—

†12 M. Clinico-Pathological Conference. Children's Hospital.

Thursday, January 9—

*8:30-9:30 A.M. Clinic, Surgical Staff of the Peter Bent Brigham Hospital, at the Peter Bent Brigham Hospital.

*3:30 P.M. Medical Clinic at the Peter Bent Brigham Hospital.

Friday, January 10—

8 P.M. William Harvey Society. Auditorium, Beth Israel Hospital, Boston.

Saturday, January 11—

*10-12. Staff rounds at the Peter Bent Brigham Hospital.

Sunday, January 12—

4 P.M. Free Public Lecture, Harvard Medical School, Building D, Longwood Avenue. Cosmetics, Safe and Dangerous, by J. H. Blaisdell, M.D.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

January 2—Faulkner Hospital Clinical Meeting at 5 P.M.

January 3—St. Elizabeth's Hospital, Infantile Paralysis Vaccine Meeting at 8:15 P.M.

January 3—Massachusetts General Hospital. Clinical Meeting of the Staff of the Children's Medical Service. See notice elsewhere on this page.

January 6—New England Heart Association, Peter Bent Brigham Hospital at 8:15 P.M.

January 7—Greater Boston Medical Society. See page 40.

January 8—Fitchburg Cancer Clinic, Burbank Hospital, 9 A.M. to 12 M.

January 9—Medical Clinic at the Peter Bent Brigham Hospital. See page 36.

January 10—William Harvey Society. See notice elsewhere on this page.

January 14—Harvard Medical Society. See page 40.

January 27—Springfield Medical Association.

February 24 to May 16—International Medical Postgraduate Courses in Berlin. See page 1211, issue of December 12, 1935.

June 15-19—The Executive Board of the Catholic Hospital Association. See notice elsewhere on this page.

September, 1936—First International Conference on Fever Therapy. See page 1325, issue of December 26, 1935.

DISTRICT MEDICAL SOCIETIES

ESSEX NORTH DISTRICT MEDICAL SOCIETY

January 8—Meeting at the Riverside Tavern, Haverhill, at 12:30 P.M.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

January 8—Wednesday. Danvers State Hospital, Hathorne. Clinic 5 P.M. Dinner 7 P.M. Speaker: Dr. Hoskins.

February 5—Council Meeting, Boston.

February 12—Wednesday. Addison Gilbert Hospital, Gloucester. Clinic 5 P.M. Dinner 7 P.M. Speaker and subject to be announced later.

March 4—Wednesday. Lynn Hospital. Clinic 5 P.M. Dinner 7 P.M. Speaker: Dr. Timothy Leary. Subject: Arteriosclerosis.

April 1—Wednesday. Essex Sanatorium, Middleton. Clinic 5 P.M. Dinner 7 P.M. Speaker: Dr. Richard H. Overholt of the Lahey Clinic. Subject: Chest Surgery.

May 7—Thursday. Censors' Meeting.

May 13—Wednesday. Annual Meeting. Salem Country Club. Dinner at 7 P.M. Speaker: Dr. Paul White. Subject to be announced later.

R. E. STONE, M.D., Secretary.
88 Lothrop Boulevard, Beverly.

FRANKLIN DISTRICT MEDICAL SOCIETY

Meetings are held on the second Tuesday of January, March and May at the Weldon Hotel, Greenfield, at 11 A.M.

CHARLES MOLINE, M.D., Secretary.
Sunderland.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

Meetings to be held at the Bear Hill Golf Club at 12:15 P.M.

January 8, March 11, May 6.

K. L. MACLACHLAN, M.D., Secretary.
1 Bellevue Avenue, Melrose.

NORFOLK DISTRICT MEDICAL SOCIETY

January 28—Hotel Kenmore at 8 P.M. Subject: "Compulsory Sickness Insurance." Speakers to be announced.

February 25—Massachusetts Memorial Hospitals at 8 P.M. Papers by the staff.

March 31—Hotel Kenmore, at 8 P.M. Dr. Benedict F. Boland—"Cauterization of the Cervix Uteri Using Various Electrical Methods." Illustrated with lantern slides.

May—Annual Meeting. (Place, date and subject to be announced.)

The censors meet for the examination of candidates: May 7, 1936; November 5, 1936.

FRANK S. CRUICKSHANK, M.D., Secretary.
1236 Beacon Street, Brookline.

PLYMOUTH DISTRICT MEDICAL SOCIETY

January 16—Goddard Hospital. Subject and speakers to be announced later.

March 19—Plymouth County Sanatorium, South Hanson.

April 16—Brockton Hospital.

May 21—Lakeville State Sanatorium.

G. A. MOORE, M.D., Secretary.
167 Newbury Street, Brockton.

SUFFOLK DISTRICT MEDICAL SOCIETY

January 29—Joint Meeting with the Boston Medical Library at 8 Fenway. "Observations Around the World," Dr. Walter B. Cannon.

March 18—Meeting at the Boston Medical Library. "The Laboratory and Clinical Story of Fatigue," Dr. Arlie V. Bock and Dr. David B. Dill. Discussion: Dr. Donald J. MacPherson and Dr. Augustus Thorndike, Jr.

April 29—Annual Meeting at the Boston Medical Library. "The Treatment of Septicaemia," Dr. Champ Lyons. "The Plurality of Scarlatinal Streptococcus Toxin," Dr. Sanford B. Hooker. Discussion: Dr. Hans Zinsser.

The medical profession is cordially invited to attend all of these meetings.

ROBERT L. DeNORMANDIE, M.D., President,
CHARLES C. LUND, M.D., Secretary,
FRANCIS T. HUNTER, M.D.,
Boston Medical Library.

WORCESTER DISTRICT MEDICAL SOCIETY

January 8—Worcester City Hospital, Thayer Hall. 6:15 P.M.: Buffet supper. 7:30 P.M.: Business session and scientific program.

February 12—Wednesday evening. Worcester State Hospital, Worcester, Mass. Dinner and scientific program. Subjects of program to be announced later.

March 11—Wednesday evening. Memorial Hospital, Worcester, Mass. Dinner and scientific program. Subjects of program to be announced later.

April 8—Wednesday evening. Hahnemann Hospital, Worcester, Mass. Dinner and scientific program. Subjects of program to be announced later.

May 13—Wednesday afternoon and evening. Annual Meeting of Society. Time, place and details of program to be announced in an April issue of the Journal.

ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester.

BOOKS RECEIVED FOR REVIEW

Diseases of the Skin. Frank Crozer Knowles. Third Edition. 640 pp. Philadelphia: Lea & Febiger. $6.50.

Thérapeutique Hydro-Climatologique des Maladies du Foie et des Voies Biliaires. Paul Carnot, Maurice Villaret, and René Cachera. 152 pp. Paris: Masson et Cie. 20 fr.

Appareil Circulatoire. Ch. Laubry. 186 pp. Paris: Masson et Cie. 22 fr.

Pathologie Digestive. P. Harvier. 162 pp. Paris: Masson et Cie. 22 fr.

The Diagnosis and Treatment of Diseases of the Heart. Henry A. Christian. 373 pp. New York: Oxford University Press. $6.00.

The Diagnosis and Treatment of Disorders of Metabolism. James S. McLester. 328 pp. New York: Oxford University Press. $5.00.

The Diagnosis and Treatment of Variations in Blood Pressure and Nephritis. Herman O. Mosenthal. 616 pp. New York: Oxford University Press. $9.00.

Tumors of the Urinary Bladder. Edwin Beer. 166 pp. Baltimore: William Wood & Company. $3.50.

A Marriage Manual. A Practical Guide-Book to Sex and Marriage. Hannah M. Stone, and Abraham Stone. 334 pp. New York: Simon & Schuster. $2.50.

The Treatment of Acute Poisoning. H. L. Marriott. 45 pp. London: John Murray. 5s. net.

Classical Contributions to Obstetrics and Gynecology. Herbert Thoms. 265 pp. Springfield and Baltimore: Charles C Thomas. $4.00.

BOOK REVIEWS

New Pathways for Children with Cerebral Palsy. Gladys Gage Rogers and Leah C. Thomas. 167 pp. New York: The Macmillan Company. $2.50.

In this small book a new note of hope is sounded for children disabled by the various forms of cerebral palsy. There is so much more that can be done. The authors have not only given us a vision of this but also have outlined a practical and comprehensive program. Dr. Robert B. Osgood, in speaking of the inadequacies of the usual methods of therapy in the introduction to the book states: "Equanimity and the banishment of fear and discouragement are immensely more important in rehabilitation than drugs which lessen anxiety, and operations which diminish spasticity." Optimism tempered with common sense radiates from every page. For, as the authors state again and again, these patients rarely can be returned to normal physical function. With intelligent guidance, however, all of them can obtain much physical improvement, education in its truest sense and a satisfactory adjustment in the present-day world with its modicum of enjoyment and accomplishments. This book with its description of games, physical exercises, apparatus, pedagogic methods and lists of books and toys particularly adapted to this group of handicapped children, can be recommended without reservation to physicians, physiotherapeutists, teachers, and especially parents, who are challenged by the problem of cerebral palsy. The authors at their special camp, "Robin Hood's Barn", have to a large part developed the methods described; and in their work have grown in ripe experience and that breadth of soul which this book epitomizes.

A Text-Book of Fractures and Dislocations. Covering their pathology, diagnosis and treatment. Kellogg Speed. Third Edition, Thoroughly Revised. 1000 pp. Philadelphia: Lea & Febiger. $11.00.

The Third Edition of Kellogg Speed's "Fractures and Dislocations" indicates the continued usefulness and popularity of this volume of exactly 1000 pages and over a thousand illustrations. The First Edition was published nearly twenty years ago. The revision has apparently been thorough and it has been hard for the reviewer to find any of the newer operative or nonoperative methods of proved worth in the treatment of fractures or dislocations (with which he is familiar) which have not been mentioned and usually described. The author frequently gives his own opinion as to the efficiency of these methods and the wisdom of their conception. Dr. Speed's wide experience and dispassionate attitude make us wish that this personal touch appeared more often. The indications for or against open operative attack and the general plan of operative procedures are all sound and well set forth. The limits of the book apparently precluded the inclusion of many of the finer details of technique

upon which so much of the complete success of bone and joint surgery must depend. The bibliographical references following each chapter make it possible, however, for the surgeon to acquaint himself with these details. It would be wise for him to acquire this knowledge before he essays to perform for the first time an operation on the bones following a fracture or to open a joint for the purpose of repairing an internal derangement.

The first three chapters, comprising about one hundred pages, discuss the general principles underlying the treatment of fractures by both closed and open methods and the mechanism and treatment of dislocations. The remaining twenty-one chapters are arranged under anatomical headings.

The amount of the text and illustration in relation to clinical importance and frequency of lesion seems well allotted. The format of the book as to headings and subheadings is excellent; the index is inclusive and the clarity of type and illustrations confer credit on the publishers.

Poliomyelitis. A handbook for physicians and medical students. Based on a study of the 1931 epidemic in New York City. John F. Landon and Lawrence W. Smith. With a section on the orthopedic after-care of the disease by Garry DeN. Hough, Jr. 275 pp. New York: The Macmillan Company. $3.00.

This handbook, based on a study of the 1931 epidemic of poliomyelitis in New York City, is primarily a record of the observations of the authors on a large amount of clinical and pathological material, comprising approximately 1,000 cases admitted to the Willard Parker Hospital, with thirty-one autopsies, together with an analysis of some 1,400 additional cases in other communicable disease Hospitals.

The volume contains the usual historical review giving the landmarks in the development of our present clinical concept of the disease with bibliographical references. The chapter on etiology and pathogenesis is perhaps too largely devoted to earlier theories and beliefs which have not materialized. The pathological and clinical sections are the best portions of the book. They include comprehensive descriptions of material from the cases studied with original observations. The restriction of the investigations to the single outbreak doubtless accounts for the limitations of the chapter on epidemiology. It does not appear particularly useful to devote a separate chapter to nomenclature and classification. The symptomatology is well written and supported by numerous individual case histories which clearly portray the disease, especially in its early stages. One cannot but feel that the authors' views on prophylaxis and specific treatment are based to a considerable extent on material which is hardly ready to be incorporated in a handbook. The book ends with a suitable outline of the essentials in the after-care of the disease.

Diseases of the Thyroid Gland. Arthur E. Hertzler. Third Edition. Entirely Rewritten. 348 pp. St. Louis: The C. V. Mosby Company. $7.50.

As stated by the author, this book represents the expression of an individual opinion and experience. One who is interested in goitre cannot always agree with Dr. Hertzler in some of his conclusions. It is but fair to say, however, that these conclusions have been arrived at after a large, personal experience, a close contact with the cases both before and after operation and a laboratory study of the material. Dr. Hertzler has written profusely on the subject of thyroid disease and has interested himself particularly from the histological and pathological viewpoint.

The book is written in simple English. All phases of goitre and the complications of thyroid disease are considered. A section is included on the hospital management of goitre patients, and a chapter on the technique of the operation upon the thyroid gland is included. The illustrations are good and anyone who is interested in the subject of goitre will find the perusal of this book practicable.

I'd Live It Again. E. J. O'Meara. 324 pp. Philadelphia: J. B. Lippincott Company. $2.50.

O'Meara has given us in his memoirs a vivid story of the life of an officer in the Indian Medical Service. An old Guy's man he fortunately retained his first pictures of India and his ability to put them on paper. To those familiar with Baden-Powell, Curzon and Younghusband much of the content will have a familiar ring. One can but conclude that after years of ardent service he is certainly one of those fortunate persons who have found life something to be enjoyed rather than simply endured.

Living Along with Heart Disease. Louis Levin. 126 pp. New York: The Macmillan Company. $1.50.

This short volume is one of the best books written for the lay public that has appeared in recent years. There are many physicians, including the reviewer, who doubted the value of the wave of popularization of medical knowledge that has swept over our country. However, one cannot have much doubt about the merits of this treatise for general lay consumption; in fact it can be profitably read by most practitioners. Although the point of view expressed is an optimistic one, the subject matter is treated in a most interesting and truthful fashion. There are very few patients with heart disease who could be harmed by reading this book, and many to whom it would be very profitable. The style of the book has an unusual charm which is possessed by too few of our current medical writers. It outlines in simple form and in interesting language the various problems concerning heart disease. This is done so that the average reader can understand its full significance. It can be highly recommended to both the lay public and the medical profession.

Transactions of the American Gynecological Society. Edited by Otto H. Schwarz. Volume 59 for the Year 1934. St. Louis: C. V. Mosby Company.

This volume of the Transactions of the American Gynecological Society is a collection of all the papers presented at the regular meeting for the year 1934. As would be expected these transactions present a cross-section of the best American achievements in the fields of gynecology and obstetrics. The reading of such a collection of papers each year would repay any physician interested in either of these fields.

Medical Practitioners in the Diocese of London, Licensed under the Acts of Henry VIII, C. II. An Annotated List 1529-1725. J. Harvey Bloom and R. Rutson James. 98 pp. Cambridge: The University Press. $1.75.

This is an annotated list of the physicians and surgeons licensed as medical practitioners in England by the various bishops of London under an Act of Parliament in the reign of Henry VIII. By this act bishops were empowered to license practitioners after recommendation by three qualified medical men, and examination. Lists of those so registered between 1529 and 1725 are given. In many cases there are brief notes about the individual compiled from well-known sources. These lists are valuable as a matter of record and should prove most useful for reference. As an appendix, various forms of certificates used are given and there is a list of the bishops during the period of these registrations. The little book is carefully indexed and finely printed.

Many of the names listed are of well-known physicians and surgeons: William Clowes, William Gale, John Fryer, William Cheselden, John Choke, a chemist and a notorious quack, Thomas Saffold, another well-known charlatan, and names of lesser importance.

In general, the system of licensing seems to have been efficient. With few exceptions, only those men who had had a long apprenticeship were recognized. The certificates of competency were often signed by important individuals, among whom may be mentioned Sir Hans Sloane and John Evelyn, the diarist.

Clinical Tuberculosis. Edited by Benjamin Goldberg. Volumes I and II. M-19 pp. Philadelphia: F. A. Davis Company. $22.00 net.

This work which the reviewer believes well merits the adjective "monumental" consists of two large volumes, the total weight of which is over eight pounds, with nearly 2,000 pages replete with many illustrations, descriptive diagrams, tables, cuts, etc., and a thirty-eight page index. The list of contributors contains many names with whom the reviewer does not happen to be familiar but others representing the best that there is in the field of tuberculosis. Among these might be mentioned Drolet, Alexius Forster, the late Carl Hedblom, Ralph Matson and the late Ray Matson, Edgar Mayer, George Ornstein and others.

In the first volume, which consists of twenty-two chapters, is a most important contribution by Godias Drolet on the "Epidemiology of Tuberculosis," and another, "The Pathologic Physiology of the Tuberculous Lung" by Pol. N. Coryllos which is divided into five sections with a particularly valuable one on intrapleural pressures and their effects on the tuberculous lung, which subject is all-important in pneumothorax work. Ornstein and Ulmar discuss the physical diagnosis of tuberculosis and its classification in three chapters, Hollis Potter continues on the x-ray findings and Dr. Goldberg himself its differential diagnosis, prognosis, prophylaxis, home treatment, treatment by rest, exercise and occupation, diet, medicinal, symptomatic and tuberculin therapy in separate chapters. Edgar Mayer discusses the salt restricted dietaries in tuberculosis and Matson takes up pneumolysis and with his brother, Ray, oleothorax and other operations.

In the second volume, containing twenty-six chapters and an index, Hedblom discusses the extrapleural thoracoplasty and Dr. Mayer, as is to be expected, takes up the question of sunlight treatment. Alexius Forster of Colorado Springs writes on the subject of climatotherapy. Tuberculosis of other organs and parts of the body is taken up by authoritative writers on the subject. The final and particularly important chapter in the second volume is the one on "The Psychopathology of the Tuberculous" by Clarence Neymann.

This work of Dr. Goldberg's contains almost too much information to be of value for students and general practitioners, but it certainly should be on the shelves of all sanatorium libraries and will be invaluable for specialists and students in this particular subject. It is a distinct and worthy contribution to the already enormous literature on tuberculosis.

Diseases of the Nervous System. A text-book of neurology and psychiatry. Smith Ely Jelliffe and William A. White. Sixth Edition, Thoroughly Revised. 1175 pp. Philadelphia: Lea & Febiger. $9.50.

This well-known textbook, considered by the reviewer to be the most complete book of its kind current in neurological literature, has been revised for a new edition, six years after the previous issue. The bulk of the book has not been increased, in spite of many additions, due to a clever device of making each page somewhat longer, so that there is more material in an equal number of pages. New methods of examination have been added and there are many changes in the chapters on the vegetative nervous system and the endocrinopathies. This book, which has been strongly endorsed by the medical profession in the past, should be welcome in its new dress.